Samll. P. Griffiths Esq
from the Author

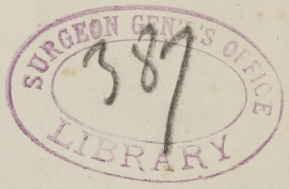
THE

APPLICATION

OF

PHYSIOLOGICAL MEDICINE

TO THE



DISEASES OF LOUISIANA.

By EDWARD H. BARTON, M. D.

Honorary Member of the Philadelphia Medical Society, and of the Medical Society of Maryland; Corresponding Member of the Medico-Physical Society of New Orleans; of the Kappa Lambda Association of the United States; Licentiate of the Medical Boards of Louisiana and Mississippi.

PHILADELPHIA:
PRINTED BY JOSEPH R. A. SKERRETT.

1832.

THE

APPLICATION

OF

PHYSIOLOGICAL MEDICINE

TO THE

DISEASES OF LOUISIANA.

"We have but one simple way left us, and that is, leading mankind to *particulars*, their series and their orders; whilst they prevail upon themselves to forsake their notions for a time, and begin their acquaintance with things."—*Bacon's Nov. Organ. Pt. I. Sect. I. Aph.* 36.

Probably in no science or art is the establishment of, and a frequent recurrence to fundamental principles, of so much importance as it is in physic; for want of this, the noblest of callings, the gift of a merciful Providence to suffering humanity, is hourly made responsible for the butcheries of a blindfold empiricism—one of the greatest of blessings converted into the worst of curses—and the ignorant charlatan of yesterday put upon a level with him, who, with the gifts of genius, and the accomplishments of education, has devoted the labours of his life to the acquisition of professional knowledge. With a full impression of the value of these truths, and feeling the full force of the sentiment expressed by Bacon, of the importance of going into "*particulars*," and "forsaking notions, and beginning our acquaintance with things," I will make no apology in offering to my brethren the result of my experience in the fevers of the south; the authority to do so is derived from the observations of near thirteen years extensive experience in one of our sickliest regions. It is hoped that these claims to attention will not be overlooked, whatever may be the result of the experience which has been their fruit.

Warm climates have been the graves of unnumbered millions; fever is the main avenue through which these make their exit, if it is true, as alledged, that one-sixth of mankind die annually of it; the causes of this remarkable fatality have been problems, to which the talent, the time, and the ingenuity of the profession have been devoted, with results far from satisfactory. Theory has succeeded to theory as wave succeeds to wave, with a duration but little less transient—"like bubbles on the sea of matter borne, they rise, they break, and to that sea return." Disclaiming all intention of denouncing

theory, of whose value I am fully advised, when it is the deduction of general facts, I am equally convinced, that these facts should be frequently and accurately observed, with all the attendant phenomena, and carefully noted. Now, whether the causes of the mortality alluded to be—putrefaction in any or all of its shapes or stages, whether animal, vegetable, or both; or dissolution, or carbonic acid; or carbonated hydrogen, or other gases; the drying process in soils recently saturated with moisture; clay soil; limestone soil; animalculæ; electricity; or the indefinable miasma with its hundred hydra heads: there are some circumstances, which, like Boerhaave's analytic reduction of the symptoms essential to fever, must be admitted by all, viz. a certain state of heat and moisture and atmospheric electricity. Waving for the present the further discussion of these or any other causes, for which I have neither time nor room, but shall reserve for a future opportunity, I proceed to state that these causes, whatever they are, are believed to have their influence upon the system, either from—1st, being swallowed with the saliva, and thus act upon the stomach; or 2dly, upon the olfactories; or 3dly, are inhaled in breathing, and thus act upon, or through the lungs; or 4thly, act through the medium of the extremities of the nerves terminating on the skin.

It is totally unsatisfactory to suppose the first; the functions of the salivary glands are performed, except to a very limited extent, but periodically, or during our meals, &c. or while under the influence of an excitant; and entangling a gas with a fluid, and that fluid not in its direct passage, is not believed to be so easily performed; besides, if such were the fact, habitual tobacco-chewers would enjoy immunity from what is called miasmatic diseases, which is not found to be the fact, and the numerous masticatories, and the experiments to avoid swallowing the saliva while exposed to the infection of communicable maladies, would not now be abandoned as utterly useless: but again, less saliva is made and swallowed during sleep than while awake; hence there should be less liability to take miasmatic disease then; while, on the contrary, it is a well known fact, that sleeping in these regions during the night is known to be eminently and peculiarly dangerous; and those who have salivary fistulæ, losing the greater part of the saliva externally, are not less subject.

2dly. It cannot be upon or through the olfactories, or inveterate snuff-takers would be exempt, which is not found to be the case; those who have that sense destroyed by disease are not less subject, and the numerous supposed protectives against epidemic and contagious diseases, as camphor, garlic, musk, and a thousand others, are now generally acknowledged to exert no influence whatever, except possibly upon the mind, from the faith reposed in them fortifying the individual above the influence of the depressing passions. And again, the most offensive and disgusting effluvia produce little influence on health, while the most dangerous and deadly gases are scarcely offensive to these organs; opposed as this is to popular faith, we are not with the universal belief that what is offensive to this sense must be injurious to health.

3dly. I think that the third theory is equally untenable. Agents acting upon the lungs must, to injure to a certain extent, impair their functions; for the lungs having but one function to perform, have but few sympathies; they would then produce either local diseases, or diseases dependent upon impairment or vitiation of function, as asphyxia, &c. In the numerous experiments with factitious airs to show their identity with the cause supposed to produce miasmatic fevers, fever has not been the result, I believe, unless when the experiment had been carried so far as to produce much alarming immediate irritation, and all the effects are explicable upon the principle of impairment of function. Neither of these are supposed to be the case in those fevers which are supposed to be of miasmatic origin; there exists no symptom in them to lead to the belief of a primary or secondary affection of the lungs; on the contrary, all those diseases have their resident and now almost unquestioned seat in some portion of the chylopoietic viscera, the lungs not being in a state of correlation with them, and having but very limited associations of actions with them, it is scarcely possible that their common, nay their universal derangement, should arise from them. A practice has obtained some distinction in England of sending patients afflicted with, or predisposed to, affections of the lungs to low miasmatic districts, and in many instances with marked benefit; the theory of benefit here must be a revulsive action on the chylopoietic organs, thus relieving the lungs by derivation, at the same time proving that as the lungs were a diseased surface, that could not have been the source through which the action was procured; the same is, I believe, a general fact with regard to those having diseased lungs enjoying no immunity from miasmatic diseases, as they are called; and again, as will be more particularly noticed presently, agents and means that are known to protect the system from the influence of noxious causes have not the least pretended or imaginable influence in protecting the lungs directly.

4thly. We are left then to suppose that noxious impressions are most usually received through the medium of the skin. It is some estimate of the value of this covering that all animals are protected in a manner proportioned to their exposures, and that its appearance is almost uniformly indicative of the state of health of the individual, whether of man or the inferior animals. Man has protected his by a thousand inventions, and increased his susceptibility in proportion to the delicacy he has produced in it. Our corporeal pleasures and pains are mostly through the same medium. Increase those sensibilities, and the sources of pleasure are infinitely augmented and so are those of excruciating pain. The balmy southern breeze cheers and enlivens the feelings; the east kindles rancour and tempts to suicide; the north-west braces the nerves and invigorates digestion; the Sirocco blasts the very sources of life; the Kamsin wind has an inexpressibly distressing influence upon the nervous system independent of temperature;* a humid atmosphere relaxes and enervates,—a dry one imparts elasticity. Strong evidences of the importance of pro-

* Vide Madden, who attributes it to an electrical state of the atmosphere.

tecting this surface arises from the general immunity from disease enjoyed by those, (other things being equal,) who properly protect it. The Indian habituated to vicissitudes by the freedom of his exposure from infancy, which renders him unsusceptible of those impressions conducive to disease—his comparative immunity from fever when tolerably temperate even in the most sickly situations, is a remarkable proof of this, and can only thus be accounted for. The same occurs with the negro, who suffers so much less from the diseases of warm climates than the whites, from their gastric mucus being less offended and irritated by variety and delicacy of food; their more early and constant exposure to changes of weather, and hence being less affected by them; but above all, their insensibility of surface and particularly to the scorching rays of a summer's sun, arising from their more limited distribution of the vascular, and of course, nervous system of the surface, (proved by the greater difficulty of procuring blood from them by cups and leeches, requiring the scarificator to be set much deeper,) and hence they are less sensible to atmospheric impressions and vicissitudes, less affected by the warmth of the sun and the debilitating influence of perspiration, or any other noxious impression that might be made upon their surfaces, and we know that the vital action of the skin is in direct proportion to the quantity of blood which reaches it.* Hence then this great avenue to disease, if not occluded, is at least lessened; in this respect, the African approaches nearer that of the lower animals than of the white man. Such also is the comparative immunity of those who make a free use of baths and protect this most important part with flannel. Another remarkable instance is recorded of the protection afforded to those who wear a dress soaked in oil, or a covering of oil-skins, in attending those who have the plague,† not an instance happening where they caught that contagion. Of the million of inhabitants taken off by the plague in Lower and Upper Egypt in four years, *not a single dealer in oil* fell a sacrifice. The same occurred in the Barbary plague and in the plague in London in 1665. Those chiefly exempted were oil-men, fishmongers, tanners, &c. Hence too the comparative immunity of those, from miasmatic diseases, who protect their surfaces with woollen clothes. Corpulency also protects the surface by preventing an undue sensibility, and by being a very imperfect conductor of caloric, thus guarding the body against the undue influence of external temperature and its sudden vicissitudes; capillary bleeding too, which acts sympathetically as well as revulsively, in fat subjects, has not the same influence as upon those more lean, and from the same cause. It is stated upon good authority that sulphuretted hydrogen is fatal when applied to the surface of the body and not inhaled, as dogs immersed in this gas while their heads were kept in a pure atmosphere perished. It is thus we account for the increased susceptibility of children to summer diseases, as they are usually the first to feel its influence.

The frequency of the attack of disease during sleep, is not only

* Broussais' Physiology. † Vide Madden's Travels.

remarkable in what is called malarious diseases, of yellow fever, of a cold fit of an intermittent, springing out of a midday siesta, &c. but in epilepsy, cholera, and many others. The influence of exposure while asleep, when during the waking state it has no influence upon us—of sleeping upon the roof of a coach, or at home in wet clothes or sheets, or in a draft of cold wind, the fatality of ship's crews in unhealthy climates, sleeping on shore with their exemption in their ships, is well known. The postillion as he drives you with dizzy rapidity through the Pontine marshes, shouts to you to raise yourself and sit up; and every one urges upon you the absolute necessity of vigilance during your dreary ride through the Campagna. Indeed, in all unhealthy situations, you are cautioned against *sleeping* while exposed to noxious exhalations; now whether this increased susceptibility to disease during this state arises from the fact discovered by Messrs. Allen and Pepys, and confirmed by others, that less carbonic acid was produced there, and as proved by Prout and others, that the blood was consequently in a negative state of electricity, or from other causes, there is an evident great change then at once, induced in the state of the skin with increase of action, and of course, increase of susceptibility; perspiration immediately breaks out, whatever is the position, (in a chair during the siesta, or in bed,) and without any additional covering, warmth is diffused; the pulse becomes full and soft, and equable; who has not witnessed patients tossing for hours upon hours, with incessant jactitation, watchfulness and dryness of skin; the moment he falls into a gentle sleep, perspiration almost immediately ensues; hence then the liability *at that time* to receive the impression producing fever.

The great liability of southern latitudes to produce fever, arises from their probable influence on the nervous system, and particularly that of organic life, that upon which the system depends for existence and support, its "wear and tear," and all its system of balances—upon the skin this system is now acknowledged to be extensively and intimately displayed, and it is connected immediately and powerfully by sympathy with the internal mucous, and the thousand influences which they reciprocally have upon each other; as being associated in our feelings of health and enjoyment, both internal and external, as well as in disease, as means for the application of medicaments, and for the support of life. That human life is probably shorter in the south, from excessive heat, and the abuse of other stimulants; that the system is sooner worn out; that it has been more fatal to those whose surfaces are most delicate and exposed; infancy; youth; the prime of life; the most robust and most inflammatory. That this waste and "wear and tear," accounted for from its effect on the skin, and thence on the internal mucous, more fatal now than formerly, from excessive use of stimulants in diet and drinks. The ancients indulging in much greater simplicity in both; and that consequently the theories of physicians and their treatment of disease has varied with the varying condition of man.

From these facts, and numerous others that might be noticed, were

it necessary, of the great and peculiar importance of impressions through the skin, the probability is deduced—that most, if not all, of what is called miasmatic diseases, produce their first impression on the system through this medium. I proceed then to the next link in the chain of actions.

It is acknowledged by physiologists, that the skin is the most extensive of the sensitive surfaces; and that in some animals it is, in fact, the only sense—that it is also the most important, must be equally acknowledged, from the universal care so assiduously employed by civilized nations in protecting it; from the many modes invented by the ingenuity, or discovered by the experience of man, in adding to its numerous enjoyments. Upon this important surface are developed parts of two systems of nerves, one part connecting it with the cerebro-spinal system, the other with the great system of organic life—the ganglionic or sympathetic system. Upon the former, which is merely the system of relation, by which man is connected with the external world, and though many of our enjoyments, as well as our pains are derived through it, yet noxious agents producing disease, but seldom, if ever, make their injurious influence on it. The latter system then being the great system of nutritive organic life, has an apparatus of nerves peculiar to itself, and that is appropriated to its peculiar functions—the *preservation of the individual;* of appropriating and converting into a part of ourselves, portions of the matter around us. It is made sufficiently clear by anatomical facts and demonstrations, as well as physiological and pathological deductions from them, that this apparatus pervades the whole system; it is sensitive to noxious as well as beneficial impressions, *without the immediate consciousness of the individual;* the centre of this system is the great abdominal brain; it is here that impressions made upon the periphery—its feelers—are repeated like that through the senses, upon the brain. If they are beneficial, the individual is only sensible of it in the improvement of his health, and that feeling of *well-being* inseparable from that state; if otherwise, we recognise it in the impairment of some function, whose coëxistence is necessary for the continuance of health and the preservation of life. The broken harmony in the extensive chain of nutritive actions associated together in sympathetic relation, extends from system to system; where it is confined to the organic system, and the constitution is unable to resist its progress, and no means are used to assist it, the health of the individual is gradually undermined without exciting his apprehensions, feeling no pain, having no fever, the foe is not perceived; though by and bye, he feels that his energies are impaired, and the foundations of his constitution sapped. Here then is an impairment of the vital functions through the organic system alone, and as this is the system of support, as well as of increase and preservation, and as animal life depends upon it for its well-being and continuance, it likewise becomes affected secondarily. But noxious impressions are sometimes so violent and powerful, as to be extended to, and involve also the cerebro-spinal system, associated as they are together by an

anastomosis with the pneumogastric, which is spread upon the gastric mucous membrane, and indirectly through the lateral ganglia. By the conversion of the physiological into the pathological state, pain is also experienced, which is not felt in their natural state; the sympathies are more and more awakened; the assaults of the foe are no longer concealed, and there is soon developed all the complicated phenomena of the diseased state.

It is upon the gastric mucous membrane that this important system is chiefly developed, as this is the great and primary agent of nutritive, organic life; it is here is unfolded the great object and uses of that system; without it the individual could survive no longer. Instances are on record where every other organ has been wanting at birth, the stomach never. It is to the organic system what the head is to the intellectual: external impressions then are not only made upon the extremities of the organic system, but are repeated or felt immediately upon the extensive development of this system on the gastric mucous, and it is so on account of the especial uses and importance of this membrane. It partakes directly of all impressions on the system—it is influenced by the excitements of heat—it partakes of the tonicity of cold—a cold dampness debilitates both—a warm moisture relaxes both; a cathartic applied to the denuded skin purges—an emetic vomits—quinine strengthens—digitalis and strichnine make their peculiar impressions—emollient fomentations allay the irritability within, quench thirst and lessen excitement. It is generally admitted that the effect of applying medicinal agents to the skin arises from their agency upon the nerves of the part; these nerves are either in relation with the cerebro-spinal system or ganglionic. It is probable that vicissitudes of temperature act only upon the former—while these, and all agents that affect us, act upon the extremities of the latter, and thence their impression is conveyed to that organ or surface that has the most extensive, important and pervading sympathies—the gastric mucous,—unless their qualities are in special relation to the organic sensibility of some part, (and the more extensive these sympathies are the greater the number it receives from other organs,) hence then it is implicated in all extensive irritations.

Parts are associated together, when there exists between them *association of function*—the lungs and skin perform to a certain extent, the same office; the sympathy is direct; the action inverse; minus the one, plus the other. It is the same with the kidneys—both being depurating organs, eliminating the fluids of the system. In each of these instances, increase the action of the one, you decrease that of the other; while between the membrane lining the stomach and intestines and skin, the sympathy is direct and immediate, the function being different, the action is direct. Apply heat to one and you immediately increase the action of the other. It is thus that in warm weather and during exercise, heat and thirst are felt in equal proportions; and thus the application of the sedatives, of cold and mucilages to the skin, quenches thirst and allays heat in the stomach and bowels. The effect of cool air to the skin in producing appetite, and promoting

digestion and general vigour, acting as a tonic on the great organic system of the surface, and thence on its interior developments, and particularly the gastro-intestinal surface, is the same as by administering internal tonics. We all know the danger of currents of air when under perspiration, and of the danger of evening dews and night air *unless the surface* is properly protected: that our most malignant and fatal fevers immediately follow the commencement of the north winds in September; that, in fact, it is the most dangerous wind in this climate—the one that requires, from the position and shelter of our houses and warm cloathing to ourselves, the utmost protection. It is the same in latitudes further north; the impression of cold upon the external surface produces pulmonary affections—it is not its direct influence upon the lungs, for to this it is unavoidably always applied: here it has been actually used as a curative agent with considerable benefit,* and we know that protecting the skin preserves us from the influences of atmospheric transitions, and that if we do not so protect ourselves we are subject to them. In cold weather we seldom see that violent fever, that is external fever, or heat of surface, as in summer, and we do not find the tongue as much reddened as an evidence of internal inflammation, nor so much furred, because the coldness not only keeps down the extent of the heat of surface, but by this means lessens the gastritis by direct sympathy. The Indians in their wild roaming state are scarcely subject to bilious or miasmatic fevers, even intemperance itself and other exciting causes seldom produces it—and why? The predisposition is wanting—their surfaces are impenetrable, though the other assigned emunctories, mouth, nose, lungs, are especially exposed. As, however, they become civilized in their *habits*, (literally, their dress,) their skins become delicate and susceptible, and they suffer as others similarly situated. The common salutation too among the Egyptians, "do you sweat well," evince their estimate of the value of the important function of this surface; and it is a common observation even among the topers themselves, that the ingestion of ardent spirits in this climate is always injurious when it does not act on the skin. Practical men know full well the value of frictions to the skin of man as well as of the horse and cow. It has the authority of antiquity in its favour, corroborated by our experience and reason. The fashion of the day has substituted *drugging* for it. Proper principles will restore it to its rank. The warm and cold bath act through the same medium, and all who are regardful of health and comfort are not ignorant of their advantages; the same of Dr. Franklin's air bath, and the same of the gratifying luxury of the eastern baths and shampooing.

These sympathies are intimate, and powerful too in the direct ratio of propinquity. Cold to no part of the external surface, has such immediate power upon the lungs, as when applied directly to the skin opposite. Hence then, the known importance of protecting the skin over the chest, when predisposed from diathesis or climate to pecto-

* See American Journal of the Medical Sciences, Vol. III. p. 53.

ral affections. The same applies to abdominal affections. Hence the value and importance of hot applications to the abdomen in colic, in ague, &c. of the highly dangerous influence of suddenly chilling the region of the stomach when exposed to cholera, and the influence of cold applications during fever and inflammation; the instinctive wisdom of untutored nations protect the first with fur, and the second with the cummerband. Experience and observation confirm the value of both. Coup de soleil, on the head, produces phrenitis; on the chest, pneumonitis.* A flannel bandage around the abdomen, (now strongly recommended upon the best concurrent authority,) as a preventive to cholera, I have used against the diseases of this climate for more than twelve years. Capillary depletion in the immediate vicinity of a diseased part, also proves the same fact; from the epigastrium in inflamed stomach; from the right hypochondrium in hepatitis; the course of the colon in dysentery; around the umbilicus in diarrhœa; under the clavicles when the upper lobes of the lungs are diseased; to the false ribs when the inferior; over the junction of the fifth, sixth and seventh ribs and sternum when the heart is inflamed, &c. The mode of operation is twofold; by sympathy and by revulsion. The first is immediate and is at once felt, hence the immediate arrest of vomiting, of heat and of thirst on applying cups to the epigastrium; to the neck in coup de soleil; to the chest in pneumonitis; the application is more rapid and obvious in children too not only from the greater vascularity of their surfaces, but from the greater activity of their sympathies. The second is through the medium of the vascular system; producing a fluxionary movement of fluids to the part cupped or leeched to the relief of the irritated, engorged or phlogosed system within.

Endermic medication, too, furnishes beautiful and important illustrations not only of the direct connexion of the nerves of the two extremities of the organic system, on the skin and gastric mucous, but of the connexion of this system, as displayed on the skin, with its interior developments, and its influence on remote actions. Morphia, quinine, digitalis, tobacco, emetine, croton oil, aloes, cantharides, mercury, emollient fomentations, temperature, capillary depletion, &c. we well know from our repeated experience, act upon and through the skin, upon the system at large, and most practical men know the efficacy of the bark jacket in the intermittents of children. Indeed, almost the whole of our therapeutic agents can be made to act through the medium of this important surface. Acknowledging the general fact of the frequent absorption of medicinal substances; the rapidity of the effects of most of these agents; the impossibility of discovering them in the circulation; the probable modifying power of the glands and blood upon them, if so

* Madden relates the case of a man, who having fallen asleep at noon-day under an awning, the rays of a burning midday sun fell upon his open bosom, through an aperture, and produced a violent inflammation of his lungs; had it been on the abdomen it would doubtless have been gastro-enteritis.

absorbed; their weakness from dilution in so large an amount of fluid, evince an unnecessary, if not impossible resort to this mode of explication, with the difficulties attendant upon it, when other and sufficient modes are so obvious, satisfies me that they are most all explicable on the theory of association of action. No one would pretend at this enlightened day of analytic physiological research, that emetine, for instance, is absorbed and conveyed to the stomach before vomiting can take place; that mercurial ointment, rubbed in upon the thighs or elsewhere, is taken up and deposited upon the salivary glands before ptyalism can take place; that croton oil or aloes must first *touch* the intestines before their purgative effect can ensue; that cantharides must first actually reach the bladder before diuresis or strangury can ensue. Such absurdities would betray an ignorance of the economy, which at this day would be unpardonable. It would be stretching credulity almost to the boundaries of homaopathy. But when it is known that every part of the system is connected to every other part by the associations of sympathy, more or less intimate in proportion to the importance of the organ and wants of the system, being fractional parts of an integral whole—a living unit; that this is presided over by a nervous system, that is but the agent of this connexion, which by its universal distribution, harmonizes and equalizes all the actions of the system necessary to the due maintenance of health; that each part is endowed with a modification of sensibility, (organic sensibility,) just in proportion to the function or duty it has to perform in the economy. Irritability being different in the different tissues, from difference of organization, there necessarily result diversified effects from the application of different substances to the system. Purgatives do not affect the mucous membrane of the stomach in a state of health, as they pass through it, but act on the intestines alone. Emetics, if injected into a vein in sufficient quantity to cause death, the appearances on the *mucous membrane of the stomach are the same* as if they were actually even present there. Strichnine and brucine act only on the spinal marrow, exciting tetanic convulsions, the cerebrum and intellectual faculties remaining unaffected. Opium, on the contrary, affects the medulla oblongata and cerebrum, and has no direct action on the spinal marrow. Hydrocyanic acid acts on the respiratory portion of the spinal marrow; secale cornutum, on the contractile powers of the uterus; infusion of tobacco destroys the irritability of the heart, and consequently arrests its action; the essential oil of almonds, and juice of aconite, are fatal by their action on the brain and spinal marrow, while the heart beats naturally during the stupor, convulsions, and laborious respiration. Medicinal substances, then, externally applied, act upon the skin, (or the nerves of organic life terminating there,) and by the associations by which they are linked together, on other organs, and by the quality of the article used being in accordance with the organic sensibility of a part, the action or effect ensues. This, then, is the explanation of electric influence or agency, or *specific action.*

Objections have been made to this view of the subject from the fact of the rhus toxicodendron, and cashew nut, and other irritants, making a local impression only. The same might be made to tartar emetic and the general class of caustics. But they are easily and satisfactorily explicable under the general law, that in proportion to the violence and intensity of a local action or impression, so is the difficulty of its transmission by the sympathies; and there are many pathological truths and illustrations of this important practical principle, some of which will be mentioned hereafter.

It is rendered probable then, that causes of disease act through the surface in the same mode that external medications do. To the objection, that they would require the same denudation as these, it may be answered, that were diseased impressions as strong as medicating ones, these last would be of no avail; that they are neither obvious to the taste, nor olfactories; and are not appreciable by the lungs; that were these the case, mankind would not have been so long ignorant of their true nature; and that the thousand modes of accounting for the nature of these causes certainly evinces their extreme obscurity.

From this mode of accounting for the occurrence of disease, the most valuable practical deductions may be drawn. We learn from it the value of the lesson pointed out by the custom and experience of most nations, to protect their surface in proportion to the climate they occupy; some to make ablution a part of their religion; others to anoint themselves with oil; a third to go naked; while a fourth cloathes themselves with fur, as shielding them from the liability to endemic disease. All these facts tend to show us in what acclimation consists; that in ameliorating climate to us by habituation, is but accommodating ourselves to the thousand circumstances around us, none of which are explicable upon the theories of accustoming our delicate senses of smell or taste—the stomach through the saliva, or the lungs by absorption, to them. It is a common-sense view of the subject that such general causes as produce a modification of climate must produce their peculiar specific effects also upon man; we learn to avoid or lessen them, "in studying well the clime and mitigating the ills we cannot shun," and in following and practising the lessons taught us by the natives. The earth was given to man to subdue and cultivate! We cannot at once go from the frozen regions to the equator and live with impunity in each without such means as modify external as well as internal impressions. The diet of the Laplander would as soon as his cloathing be fatal to the effeminate southern Asiatic, and the light vegetable diet of the equator would as little satisfy the frozen inhabitant of the pole, as his scanty cloathing would protect his surface. It is in accordance too with the beneficence of the Deity, who has promised us an antidote to every ill to which we are necessarily subjected, that general causes productive of disease should in some general way be controllable or relievable by the intelligence with which he has endowed his creatures. By any of the former modes, this is impracticable; by the latter, the dictates of sense are confirmed by the wisdom of experience. As we proceed in analyzing causes and discovering effects, we advance in science and progress in localization.

We define the sects of the intellectual faculties, we discover the local lesions of diseased actions. The first enables us to measure capacity, and modify and adopt education to development. The second, to apply appropriate remedies to a diseased part. The one with the spirit of true philosophy enables us to discard the metaphysical jargon of the schools. The other with the certitude of the exact sciences, exposes us with the finger of unerring truth, the blinded empiricism that has so long obscured the usefulness of the profession. Localization and detail are the children of modern science.

In searching for the seat of disease, pathological anatomists are not satisfied unless there are found traces of inflammation after death, as evidence of its previous existence; on *the parts* to which this *important system is spread*, these testimonials are usually found in great abundance; but it would not be fair to expect the centre of this system itself to be always accompanied with this symptom of vascular morbific action. The brain does not always evince inflammatory action when the eye, the ear, or any other of the organs of sense are affected; besides, the most profound anatomists have doubted whether the ganglions and plexus have the anatomical characters to evince this species of organic action. I give, however, from Dr. Cartwright's valuable essay on yellow fever, which has been shown me since writing so far, the following quotation, evincing his opinion of the result of his dissections; and it has afforded me great gratification to find the similarity of our conclusions, with regard to the affection of the great system of organic life, though the premises by which we have arrived at them have been so different. His evidence is drawn from the usually unerring test of the dissecting knife. Mine are derived from pathological facts and physiological principles. They furnish strong corroboration of each other. "I discovered," says he, "the diseased state of the ganglions, the ganglionary nerves, and the inflammation of their *investing* membrane. The semilunar ganglions and cœliac plexus were, in particular, highly diseased. The membranes immediately investing these ganglions and their plexuses, were of a deep *scarlet*, and in some places of a black colour. This inflammation was not confined to the tissues immediately investing the nerves, but extended to the neighbouring tissues, especially of the semilunar ganglion. The whole of the membranes enclosing the nerves, denominated the solar plexus, lying upon the cœliac and superior mesenteric arteries, were black with inflammation. The cellular substance investing the hepatic plexus, as it extends on the hepatic artery and vena portarum, the splenic, mesenteric, and renal plexuses, together with the cardiac and pulmonary plexuses, was found to be of a scarlet colour. In a word, the delicate tissues involving the whole of the ganglionic system of nerves were more or less inflamed. Of twenty subjects of the yellow fever of Natchez, 1823, the ganglionic system of nerves were minutely and closely examined in seventeen; in the other three they were not. In these seventeen subjects, there was not a case in which the investing membrane of the ganglions and their plexuses were not highly inflamed."

Believing from the facts adduced and their legitimate sequences

that the causes of disease act generally through the skin upon the great organic system, and particularly upon its most sensitive, most used and most useful and indispensable part of it, the gastro-intestinal mucous, I proceed to state some pathological proofs and illustrations of it. I infer then that irritation and most usually inflammation of the stomach and intestines is the cause of fever from—1st. The symptoms. 2d. The remedies relieving it. 3d. From certain known causes directly applied to it producing it; and 4th. From the proofs exhibited on dissection.

Having excluded from this essay an investigation into the *general causes* productive of fever, I am forbid using in the argument their liability to produce the condition assumed to exist, but it is believed that the position does not require the assistance that would be thus given to it.

1st. The symptoms are pains, uneasiness, malaise, heat and tension in epigastrium, a perception of something unusual or wrong in feeling or function in the abdomen, and this especially there from the occurrence of similar feelings from having swallowed articles that disagreed with us, nausea and vomiting, thirst, and particularly for cold drinks, dryness and foulness of tongue and clamminess of mouth, chilliness, all evidently proceeding from the gastro-intestinal surface; the last being common to them and affections of other parts, but connected with the other symptoms, pointing out the state of things here represented. Upon this last symptom I wish to lay great stress. When a part is injured, is pricked or stung by a bee, it first becomes pale and paler in proportion somewhat to the violence of the injury; if it has the power of reaction, this is removed, and redness and other symptoms of inflammation, or fever, is substituted; in all the acknowledged phlegmasias, a chill, which is only increased paleness, is a prelude or precursor, a first step in the attack. In all the cases of algid fever, (cold plague, a disease whose chief diagnostic is the excessive and long continuance of the cold stage,) I have ever examined, and they have been numerous, there existed traces of the most violent inflammation of the stomach and in apparent proportion to the intensity of the cold symptoms; the thirst for cold drinks during the chill proves also the local inflammatory irritation of the stomach at the same period. It should not be deemed extravagant or illegitimate then, to infer, from all that has been said, the existence of inflammation in every case of fever preceded by a chill. This is also inferred from the influence of cups to epigastrium in relieving cold extremities; and it is equally well known that if stimulants used in this stage, the next, if it is superinduced, is rendered the more violent by it. In speaking of *chill* I do not mean *ague;* this is, I believe, almost altogether nervous, and is equally common to lying-in-women as to intermittent fever, and usually is easily removed by anodynes.

But pain is by many supposed to be requisite to infer inflammation; it is now well known to pathologists that inflammation may exist without pain. The nerves of organic life, with which the intestines

are principally supplied, are from this system, and these are not the nerves of sensation. I have often seen, after death, traces of the most violent inflammation of the intestines, and even ulceration and gangrene, without pain having been complained of during life, as an indication of it. These are facts well known to the experienced part of the profession. Hence then in forming an opinion with regard to the inflammatory character of an intestinal disease, the fact of the existence of pain is not by any means essential, as is believed by many; but that tension of the abdomen, thin, frequent, watery stools, or constipation, red and dry tongue, a corded pulse, great thirst and the violence of the fever, are indications, which, if pursued, will seldom, if ever, mislead us; and the effect of the local bleeding itself is a further proof of it. These, together with a general disturbance of the functions of this system, are evidences of the impairment or injury to parts on which the ganglionic nerves are spread. But there may be pain accompanying the inflammation; the state and functions of a part are often changed, from the supervention of a pathological condition, but the nerves of the cerebro-spinal system are also extended to some portions of the intestines, though in a very limited manner; when inflammations attack these portions the centre of *that* system must become sensible of it through the existence of pain, and it is supposed then to be easily recognised; but the misfortune and the doubt, and the great injury to practice arises from *necessarily* associating *pain* with *inflammation*, that it is the sine qua non, that there can be no inflammation without pain, though we know there can be pain without inflammation; and the pains of colic and cramp are sufficient illustrations of it. The positions above stated, if true, (and the brightest luminaries of the day have illustrated with the best established scientific facts, the important discoveries of the "inspired" Bichat upon this subject,) lead to consequences of the greatest practical nature; it reduces to certainty a disputed fact of the utmost consequence, and it indicates a practice, from which relief, if properly and timely applied, is almost sure to be obtained, and shows that the only mode by which that relief could have been procured must have been by the subduction of inflammation.

2d. *Remedies.*—A strong desire for and great influence of refrigerant sub-acid drinks; of cooling applications, and particularly to the epigastrium; the almost immediate effect of capillary bleeding from the epigastrium in relieving it, if in sufficient quantity, and the influence of mucilaginous fomentations there, in quenching thirst, and removing tension, heat, pain, fever; the effect of stimulants and drastic remedies when swallowed immediately, producing additional warmth there, and an increase of all the symptoms, only mitigable by their acting revulsively upon some other organ, and thus producing relief by derivation; the influence of blisters there in aggravating all the symptoms; the effect of saline cathartics in certain advanced stages of fever, producing dryness and increased redness of tongue, of which I have seen numerous instances, it occurs in yellow and bilious fevers in proportion to grade, (that is, according to views

here presented,) in a ratio with the violence of the local inflammation. From the effect of a remedy we can often infer the state of an organ upon which it acts. Thus, this state of the tongue, as well as the symptoms above enumerated, arising from the inflamed state of the mucous membrane, usually of stomach and intestines, is aggravated by these lively irritants. Hence, then, when these means produce it where it does not already exist, or increase it if it partially exists, they act as irritants, and when this state of tongue is found, it is fair to infer the inflamed condition of these same organs; and the reason that irritants do not uniformly produce or increase it, arises from their acting upon some secretory organ, and the consequent depletion removing the influence of their impression. There are various other irritants, which when applied in certain stages of fever almost invariably produce redness and dryness of tongue, as well as cathartics, as soup, porter, wine, toddy, bark, &c. proving that they produce a state of stomach, of a high grade of irritation, if not inflammation, and that this appearance of the tongue is an index to it.

I admit that the tongue is sometimes dry, and probably red, when the stomach is not the part primarily or mostly irritated, and that these conditions may be removed, at times, by internal remedies, acting revulsively upon some sympathising organ, and producing relief by procuring free secretion; the stomach being, as it were, the centre of the sympathies of organic life, has repeated upon it, or radiated to it, and has a primarily sympathising relation to, all irritations: but the treatment by revulsives and irritants are always hazardous, for the risk is ruin, from the same cause, of increasing the irritation repeated from the stomach on the irritated organ; for in the pathological state the connexion is more direct and intimate, having the preference over other organs, and if the revulsion, which is precarious, is not effected, injury is certain, the amount of irritation being directly increased.

3d. From certain known causes directly applied to it, producing it, as indigestible food, ardent spirits, poisons, worms, foreign bodies swallowed, their discharge sometimes at once relieving it. It is not necessary to prove at this day, that inflammation, as well as irritation, may be periodical, the difference between them being in the grade and amount of organic movements; for experienced men do not deny the periodicity of some species of ophthalmia, of many species of cutaneous diseases; that the inflammation of gout is periodical; the same of rheumatism, of dysentery, of pleurisy, peripneumony, &c. Frank relates a case of intermittent fever from swallowing a piece of lard. I have seen a case from swallowing a pebble, and another from swallowing a small roll of paper. These periodical movements are impressed upon the system as one of its necessary laws. There is scarcely a function of the whole system, (the circulatory not excepted, for which the period of repose is not much less than that of action,) but what is performed in a periodical manner; the same occurs with regard to pathological phenomena. There are

sufficient evidences, besides those above enumerated, as well of worms as others, evincing the existence of a permanently irritating cause, with only periodical exacerbations, or evidences of it. Whether these intermissions or relief, arise from the sympathies producing occasional revulsion or depletory metastasis, or is an incident to one of its laws, is not material.

But much stress has been laid upon the supposed stumbling-block —the difference between the gastritis, the very ordinary accompaniment of our fevers, and what is termed the simple gastritis from poisons, &c. and I am very willing to admit that there are some differences in the appearance and symptoms of the cases. This difference, however, is principally at the commencement, afterwards the sympathies have time to play, and of course produce their usual symptoms. This difference, it seems to me, arises from the mode in which they are produced; the one from the *direct* application of a morbific agent —the other *indirect*, by means of the sympathies; hence then this latter forms only a part of a series of disordered actions, of course accompanied with additional symptoms—those peculiar to itself, and those evidencing other derangements of the great ganglionic system, through which it was received, while the former has only its own ordinary sympathies producing symptoms which its direct derangements alone could excite; they are sometimes more, sometimes less, dependent upon the susceptibility and irritability of the individual at the time.*

Upon the same principle the difference in the types and appearance of fever may be satisfactorily accounted for, though their pathological phenomena are essentially or nearly the same. The *tout ensemble* of the system is composed of an aggregate of organs or glands, which are so many agents or instruments for the maintenance of life, associated together in their actions, influences, and functions, though each having its own sphere of duties to perform, either constantly or periodically; they are affected particularly by atmospheric influences and vicissitudes, most of which probably depend upon electrical causes. These eternal changes in the medium in which "we live, move, and have our living," acting upon our susceptible organization, gives that peculiar type which evinces to practical men the difference of fevers. Now, a gastro-enteritis may variably or equally predominate in all these types, yet the sympathies that connect the various parts of the system together, may not in the same way evince it. One system or apparatus or gland may now show it in a certain order, at other times may not, or the order or amount of sympathising action may differ. If I am asked for an illustration I would point to the difference in general appearance of our vernal, summer, and autumnal fevers; to the typhus and yellow fevers, &c.; many of whose symptoms are different, requiring from the practical physician a modification of treatment. Yet their differences of lesion may not be so great, and the general similarity of treatment by the profession

* In Case VII. in illustration of this, in Appendix.

evince their belief, in the same general identity of diseased action or derangement.

4th. *The appearances after death.*—There are few subjects upon which the profession generally are so uniform, as they are in the acknowledgment of traces of inflammation in the stomach and bowels after death from fever, however it is to be accounted for; and this unanimity would be greater were it as generally known, that redness is not the sole indicator of inflammation; that few know the various shades and grades of inflammation when they see it, and infinitely fewer trace it. The present distinguished professor of anatomy in the University of Pennsylvania, has thrown much light upon this subject, in his late work on pathological anatomy.

Practical men must all acquiesce in the valuable truths indicated by Broussais and his followers; that by frequently comparing after death the state of the organs with the symptoms which had predominated during life, we learn to refer the latter to their true cause—to distinguish the alterations of pure sympathetic actions from those due to the idiopathic lesion of an apparatus—avoid prescribing for the indications of a disease for the disease itself—a mere skirmish of outposts—we notify the false opinions we have entertained—habituate ourselves to be circumspect—become skilful in distinguishing the influence of external agents from those essentially dependent upon the regular succession of morbid phenomena—to be satisfied that reasoning upon diseases purely hypothetical, unless based upon their actual pathological state, or as near that state as our present information reaches, and that symptoms are only of value as they indicate that state; in a word, to perfect ourselves in all the branches of physiological practical medicine. It is in vain for men to talk of experience in physic, without associating in their minds living symptoms with autopsic phenomena. It borders upon the "*experience*" of the empiric, who looks to an indefinite kind of relief, without having in his mind the *mode* by which it is to be accomplished; without knowing, or inquiring for, or caring for, the organ affected—the kind of lesion it suffers under, or the laws by which to effect diversion or relief.

"Diseased secretions" are said to be the effect of fever; then it would be fair to infer that the organs from whence these secretions are derived, and whose affection is necessary in fever—the seats for the application of treatment, are the localization of its primary irritation. It is generally acknowledged, that the great danger in fever is the supervention of inflammation, and that death is almost always accompanied by the inflammation of some organ essential to life, and that it *is the cause of death*—the *causa sine qua non.* If this is the fact, and experience in the sick-room will confirm what the dissecting knife will corroborate, the existence of a topical affection, it is worse than useless to speculate upon the causes or quo modo, whether it is primary, or the reäction after nervous depression. It is the practical truth we want, and the means of removing it. Now, it is idle to say, that as fever, (as they contend,) manifests a loss of

energy in the brain, which rapidly extends to every organ and every function; that it consists in debility, for their treatment would not be consistent with their theory: emetics and purges, &c. are not tonics; excess of action in a part requires the means of lessening it, and we believe the best means are topical depletion, &c.

The experience of Dr. Southwood Smith is emphatic that "traces of inflammation are legible, deep and extensive in proportion to the intensity of fever, and to the rapidity with which it extinguished life." Dr. Eberle says, "fever perhaps always commences by a local irritation," and authorities might be cited without number, in proof of the now pretty generally admitted fact. It is not going too far to say, that practical men now almost universally acknowledge that the great danger in fever, (even with those who do not believe in its originating it,) is the supervention of inflammation, or what they sometimes denominate it, "local determinations," (and their treatment will prove it,) and that death is almost always accompanied, if not caused, by the inflammation of some organ essential to life. It is obvious then, that the principles of treatment, will, or should, be the same as with physiological physicians, in preventing or curing the *causa mortis;* that is, to *cure local inflammation*, and the most successful mode of treatment indicates this local origin and seat. There is no mode of treating fever without depletion of some kind. There is evidently topical action, or loss of balance of some description, and depletion from some emunctory is necessary to equalize it. The indication will be then to procure it from the safest, the most certain and the most influential part. Upon this subject, some experience is due to the opinions and experience of those practising in regions peculiarly inimical to human life, where diseases run a rapid course of violence and malignity; symptoms are strong and unequivocal, and practice teaches a lesson worth all the theory in the world. In more temperate regions, diseases run a milder and longer course, symptoms are more equivocal, and diseases are more under the controul of treatment.

Dr. S. Smith says, "that the brain and nervous system first affected in fever, but of the nature of the primary functional disorder we are ignorant." The nerves are the outposts of the system, the vanguards, the feelers, and why should they, which, while it is their peculiar duty and function to convey impressions to us, not convey that of noxious causes also? But their conveyance of these causes does not, by any means, prove that they are primarily diseased, though they may primarily convey impressions that may be injurious, and be productive of disease to other parts of the system. It surely cannot be astonishing, or unknown, that we receive through our senses, as well as the organic system, the impression of morbific causes, without themselves partaking of the disease. Otherwise a neuralgia would be a part and portion of every fever; nay, of every disease. These impressions may be sometimes directly conveyed to the encephalon, the great centre of the sensations that connect us with the external world; but they may not be, and my impression is

they usually are not; but they affect first the great nerves of organic life, and to affections of this system do I account for most of the phenomena and effects of fever. The first precursors and earliest symptoms of fever are malaise, nausea, vomiting, loss of appetite, thirst, clammy mouth, furred tongue, constipation or the reverse, pains or uneasiness of abdomen, back, and legs, all referrible to the great abdominal centre. Others, as head-ache, increased heat or cold, are but radiations or effects of these, and are usually but secondary in their effects and consequences; the same thing takes place with respect to the secretions. An organ being deranged, just in proportion to its intensity, and to the value and importance of that organ in the economy, so is the balance of action, united by sympathy, essential to the performance of all the functions of life, destroyed. Secretions are deranged, or increased or altered, (if ever,) the disease spreads; that is, more and more sympathising organs associated in the relation, are deranged in their actions; the liver rarely, until medicine is administered, or the fever continued some time; and it is evident, that the heart is not the first to receive the impression of fever, and that it is always sympathetic; not only that the other symptoms always precede it, but it is only necessary to mention the fact, that even the direct introduction of no known poison into the blood produces fever.

It is very important to ascertain, whether a parenchymatous organ is affected in fever, or whether it is limited to the gastric mucous membrane. The sympathies, the symptoms, and treatment are essentially different. With the latter, the sympathies are very active and usually highly developed. With the former, less so; and they are recognised from their increased size or swelling, pain on pressure, or without it, position; and when their functions are affected, increase or decrease of the secretions, as known by the discharges; and whenever called to a case with absence of the above symptoms, it is safe to infer the existence of a gastro-enteritis. The treatment too, is in some measure different. The cutaneous surface but slowly or indirectly sympathising with the parenchyma, certainly not to the extent it does with the gastro-intestinal surface, and probably usually through this medium only; it will form an important difference in the application of medicaments, and particularly of vesicatories. Internal remedies can also be used with more safety and impunity to revulse upon, and deplete from that surface for the relief of the diseased parenchyma.

Believing then, that the great system of organic life, is the one which receives almost all impressions of disease, and particularly that most important part of it which is spread on the gastro-intestinal mucous, deriving its impressions through the direct and intimate associations with the epidermis; believing, that for the continuance of health, there must exist a due balance and equilibrium of power and harmony of action in the various parts of the system; that the primary impression of disease is local in the very nature of things, (to apply a cause to the whole system at once is incompatible with the physiological life of the individual and too absurd for serious argu-

ment,) the part becomes irritated, a pathological state ensues, the organ most associated with it in function, in physiological importance, in periodical action at the time, or that may be in a state of sub-irritation, takes on the action or removes and translates it, and excites the sympathies, and effects ensue in proportion to the violence of the exciting cause and number of the organs influenced by it. The theory of cure then, may be resolved into one of antagonizing powers, a THEORY OF REVULSIONS, and that as all disease must consist of irregularity of action, a minor grade of action in one part is compensated by excess in another, the indication of equalizing is not so much accomplished by raising the first as by reducing the last; that mode is by depletion, from whence the excess exists. DEPLETION then, is the primary agent in revulsion. There is a definite quantity of blood in the body which affords the pabulum for all the secretions and excretions as a reservoir, and all the secretory glands and depuratory emunctories abstract or receive a part for their own proper purposes. Where one of these is excited to increased action, it must be at the expense of many others. If there is produced increased action or depletion from the skin, that of the kidneys and liver must be less; cold diminishing perspiration increases the urine; in diabetes the skin is dry and torpid, &c. The agents that excite one system of organs, debilitates another. We never have general excitement or general debility. It is a theory of compensation; excess of action in one part being counterbalanced by less in another. We seldom or ever, except in the mildest cases, act on a diseased organ directly. We antagonize a healthy *against* a diseased one; we invite a secretion from one organ to relieve the oppressed and phlogosed condition of another; we cup or leech near a diseased organ for the same reason. Such also is the theory of those, if they have any theory, who indiscriminately apply to mercurial ptyalism to remove the most ordinary fever; by some it is believed to "translate disease to the mouth;" by others to overcome it by "substituting another action that is greater." The fact is, it is revulsion. The same may be said of another class, whose sole object is to purge and puke in fever, whatever may be their theory of its intended operation. Where it succeeds, it is by producing a secretion from one organ to relieve the oppressed condition of another; *when it does not produce this secretion it does not relieve.* It is a fact well known to practical men, that watery stools never benefit. They are the products of excessive irritation of the exhalants of the intestines; this like the cold sweat or exudation from the skin, and emetics, always exasperate, if they do not produce a free discharge of bile or perspiration, or a very free discharge of mucus. The same may be said of those who trust their reliance to tonics and blisters in fever; a free discharge from either being indispensable to success. I appeal to the experience and multiplied observation *at the bed-side*, for the truth of these general facts. With regard to mercury, cathartics and emetics, it is the avowed object in administering them. With respect to tonics, (I do not here allude to cases of simple debility, but when applied to what is called,

"to *cure* fever," that is to *prevent* it,) an action, or rather a discharge from the skin, is the almost uniform precursor of its successful administration, and is the immediate consequence of association of action between the parts, resulting from the elevation of the healthy organic action of the surface to which it is applied; if it does not, the irritation produced is a local one on the stomach, which instead of relieving adds to the amount of irritation previously existing there and aggravates the disease. Or, if there should be disease in another organ, so permanent or stationary, as not to be translated or removed by it, the amount of irritation is increased, and there is aggravation of the case, and so with all irritants. The *revulsive depletion is an antidote to their otherwise injurious impression;* and so with blisters. I do not here allude to the primary discharge, but to the "*running*" after. A dry blister is always known to have transferred its irritation to some internal organ, and is the harbinger of injury. So one of free discharge is always promotive of relief; the same is true of the prevention of a fever by diaphoretics. When such fever arises from an intense local inflammation, if it cannot be so relieved, then the diaphoretics act as irritants, and aggravate. The same thing takes place in the common mode of administering large doses of laudanum in the incipient stages of a cold; if it produces free diaphoresis, it relieves; if not, it aggravates. And again, in the treatment of intermittent fever by opium, when *properly administered*, it spends its influence upon the capillaries of the skin; the powers and actions of the system become equalized, and no soporific effect is produced, in most cases, not even constipation; the influence of the remedy seems spent in effecting the revulsion; and again, the dry, mercurial, ulcerated sore mouth never acting as a revulsive. Hence too the important influence on health as well as disease, of various periodical depletions, and particularly the menstrual, and to the same cause may be attributed the protection cutaneous eruption affords children in teething, and of their being often guards to the constitution in adults, of carbuncles in the plague when they give out a fluid, and in fact most of the exanthemata protecting internal parts, and the danger of their repulsion; the herpetic eruption on the lips affording the index to safety to more important parts; and indeed the importance generally of metastases, which are only exchanges of diseased action, from an internal to an external one, and hence too the general relief in the large class of cases to which the external application of tartar emetic has been beneficially made. Indeed there is scarcely a beneficial agent whose mode of action, or relief, is not by some *depletory process*, with a probable limitation of those where the nervous system alone is affected. With such explanation of the various theories of our brethren, proving *the unity of action for the unity of purpose*, they can be no longer subject to the stigma of proverbial disagreement.

The purging in gout, in dyspepsia, the calomel practice in dysentery are all explicable upon the theory of revulsion. The two first relieve the upper, by antagonizing against them the lower bowels.

The latter, substitutes a free depletion from the liver or mouth, for the irritation of the colon. The same explanation is applicable to the translations of gout from the extremities to an internal organ, and of erysipelas from extremities to face, &c. and it frequently exercises a revulsive influence on internal diseases. All the crises of authors are accompanied with discharges. The effect of inclination too, in producing disease, and the reason that some have lived to an advanced age in indulging in it, arises from their probably existing some cotemporaneous or subsequent depletion that has tended to equalize the broken harmony of the system and restore the balance. Some such instances have occurred under my own observation; of the former, hæmorrhoidal and cutaneous affections; of the latter one, when the individual after paroxysms of intemperance of weeks duration, would in coming out of them, retire to bed and sweat for days profusely, and rise after that time like another phœnix, from the ashes of his own sottishness. These continued until after his fiftieth year, when from a discontinuance of this really curative habit, he fell a victim to it.

Such are some of the effects of revulsive depletion by secretion; but as secretion can only take place *in one certain state of a gland*, where its nervous and vascular situation is in a certain relation; to constitute its organic sensibility; if minus, or plus excited, it does not ensue; as we cannot *force* this state, no more than we can the mucus; "thus far shall thou go and no further;" it must be obvious that it is a more uncertain mode of relief in fever, than that of artificial capillary depletion, which is always under our controul. In yellow fever, and in our rapid Herculean diseases of the south, the tardy and uncertain mode of acting upon the secretions alone, will not answer. In the first, just in proportion to its violence, so is there a solution of the sympathies of the system, *the only means by which we can reach the secretions;* purges, emetics; diuretics may act; their action is exclusively local, it is expended upon the organ; no secretory sympathetic action is excited; it answers no end in establishing equilibrium. Witness the fatal walking cases of Rush. Of those dying in an hour after feeling and appearing perfectly well, and eating a healthy meal. Of the absolutely fatal sign of the three naturals, as Dr. Rush called them, known here to experienced men, in our most malignant form of fever; the natural tongue; natural pulse; and natural skin. One had as well put in a dose of purgative pills to clean a gun-barrel. The same may be said of our highest grades of fever, which are often in the same condition. It is here from the highly excited and phlogosed condition, the secretions are locked up beyond the power of irritants to remove; it is only then by general and especially local bleeding that this can be removed. All else in this state is often nothing less than adding fuel to the flame, unless the system should accidentally become *worn down to the point*, and goading it on to that crisis, whose event is more than doubtful.

The theory, then, is a local impression producing a pathological state, depending for its phenomena on an increase or exaggeration of local action. The constitutional irritation is the consequence of

this, through association of action, and as however great constitutional excitement may be, it never can, in the nature of things, be every where equal. There must be grades of action, or of suffering; the medication must be to lessen the general amount by general bleeding, and as we cannot act upon a diseased organ directly—as to a highly irritated and excited organ, all internal remedies must at first be alike irritating, to a certain extent—the mode of relief is to lessen the amount of irritation in the organ most diseased, by local capillary depletion, or translate it to another organ in sympathizing connexion with it, and thus antagonize this organ against it, provided we can safely excite its depletory functional action by giving such means as act upon its organic sensibility. But when the sympathies are gone—the links that connect organ to organ, and in the aggregate form the *tout ensemble*, the organic life of the individual—there is no mode but the first. If the stomach is affected with a deeply radiated inflammation, this is not sufficient, and it may ameliorate, it may lessen the amount of its inflammation; but if the recuperative energies of the stomach are gone; if it has not the power of disembarrassing itself, by calling another organ sufficiently to its relief, death is inevitable. And even when the sympathies are not gone, they are often insufficient to remove a deeply radiated inflammation of the stomach. Such happens in our highest grades of algid fever, (and doubtless in cholera,) when, so far as my dissections have gone, the stomach is usually one coat of scarlet, and always extensively inflamed. Capillary depletion, then, is sufficient to lessen the action, (where it does not remove it altogether,) until it comes within the grade of a safe remedial power; we then call in a secretory action to its relief, by revulsing on it with some greater degree of permanence, and the system is thus enabled to react, and restore the lost balance and harmony.

Having thus exposed the general theory of cure, I proceed to the practical application of the principles. All physiological, as well as pathological changes, take place in the extreme capillary system. The rudiments of health are recognised in the ruddy distended capillaries of the surface; their pallid depleted tissues, their various shades of green, yellow, and blue, evince the vestiges of their diseased condition—states independent of the general circulation. The yellowness of surface in yellow fever, is now known not to proceed from the effusion of bile; the eyes and nails are not affected, (though the first is red from blood,) that secretion may be unaffected. It is not from the broken down state of the blood, (for blood taken from such patients coagulates as usual,) it is the diseased state of the great organic capillary system; they are disposed to pour out their contents in the last stage of this disease, and hence the frequency of hæmorrhages, &c.

The skin is dry, rough, moist, clammy, or shrunk, according to the state of the important organs within which it sympathizes, impressions upon the skin as influencing internal organs, and particularly the gastric mucous, either as productive of disease, or as reme-

diate agents, have been before adverted to, and as it was rendered probable that the sympathies acted differently, vicinage was deemed important. Reducing general excitement by general bleeding, will not reduce the system to the secreting point, nor remove a local inflammation, its influence upon every part is alike; but the lesion being topical—the phlogosis—the irritation is topical, and it requires topical capillary depletion to remove or reduce it. The fact is generally acknowledged, and astonishment is expressed that a local bleeding near a diseased organ should have so much greater effect upon the general circulation, than one from the arm, or from the general circulation itself. To me, the reason appears very obvious. The general excitement is produced primarily, and kept up by a local irritation or inflammation. A general bleeding takes no more blood from one part than another, and has but little effect upon it. A local abstraction of blood, on the contrary, has, as it removes that state of things, by which the excitement was continued, and hence then its removal with its cause. Local depletion, besides its influence from loss of blood, and revulsive irritation, acts also sympathetically, or else we cannot account for the rapid cures of gastritis, catarrh, arachnitis, &c. by the application of leeches to epigastrium, and sternum, and neck. If cold is suddenly applied to the surface or feet, and particularly if they are warm, an immediate increased action of the kidneys is the consequence, and a desire to urinate follows. This occurrence is too rapid for vascular connexion. It must be sympathy. The same is true of cold applications to epigastrium relieving vomiting, irritation, and inflammation of stomach and intestines, of certain constipations, &c. In applying cups and leeches to remove an internal inflammation, it is necessary to graduate the depletion, to insure sufficient to remove the local inflammation, they themselves produce. In the inflammation of the membranes, and especially the mucous, we seldom succeed by general bleeding. It diminishes the mass of blood, and exhausts the patient, without affecting the local irritation and congestion, which, located in the capillaries, is not easily affected by depleting the large vessels. In the congestions of the abdominal and thoracic viscera, the functions of those important organs are oppressed with a load of blood; the heart is barely kept in action, from the deficiency of that fluid in the great vessels; what then is the prospect of a remedy acting upon *that* system, when the disease is beyond it? What other remedy is applicable, except one, acting upon the capillaries themselves, unloading them of part of their oppressive weight, permitting them to react? And does not success vindicate the application of these principles? But the application of leeches is never a substitute for general bleeding. The remedies are different, the two systems, the vascular and capillary, are regulated by different forces, and sometimes placed in a state of antagonism. They are seldom applied when the lancet can be used; the latter is a general remedy, the former local. It is to the part, what the lancet is to the raging torrent of the circulation. Is there any remedy to be com-

pared to cupping and leeching in the inflammation of the stomach and bowels, in hepatitis, nephritis, peritonitis, whether named dysentery, bilious, or yellow, puerperal or other fevers; or vomiting, or cholera infantum; inflammation of the lungs, of its lining or investing membrane, or of the heart?

The direct sympathy and immediate agency between the stomach and skin opposite, attested by innumerable examples, besides those already enumerated; the effect of tobacco; of morphia; quinine; the mucilaginous fomentations; of heat and cold are very obvious and apparent, and equally so is the bleeding from the same part, by cups and leeches. I have often seen them remove a violent fever in the space of from half an hour, to an hour; the most excessive vomiting almost immediately; severe pains in the back and limbs, in fifteen minutes to an hour, (applied to the epigastrium,) thirst and redness of tongue. Case of Miss O. of yellow fever; with delirium; red and dry tongue; *had been treated by bark in substance; a large blister to the epigastrium, &c.* I applied at once cups to the epigastrium, and as long as they drew, and the blood run, *relieved the redness and dryness of tongue*, and mitigated the delirium; a small vein being opened on the margin of the sternum; it continued to bleed; but when it was stopped by pressure for fifteen or twenty minutes, the *redness and dryness of tongue returned;* when permitted to continue, there soon *ensued paleness of tongue and moisture*, and comparative ease; the vital powers were however too far gone, and she sunk.

In southern climates heat acts upon the nervous system of organic life through the skin, and tends to a development of capillary action over the greater part of the system, and especially upon the mucous membranes of stomach and intestines; and hence, the predominance of great thirst in hot weather, or from labouring to excitement; precisely those sensations produced from eating salt food, and drinking ardent spirits, and when each of them are carried far, they produce the same effects, and are known by the same symptoms. Diseases run through their stages, with much greater rapidity; and disorganization sooner occurs. Remedies must be prompt and powerful; the disorganizing action must be impeded or weakened in its march. With general depletion for the general excitement, there is no remedy equal to capillary bleeding, to the disorganizing action which is local, and extensive experience has convinced me, that in a certain state of fever which may be denominated the typhoid state of continued fever; characterized by a meteorized abdomen; dry skin and tongue; with or without delirium, or subsultus tendinum, but usually with them; diarrhœa or watery stools and quick pulse, a state that the various grades and qualities of stimulants and irritants have marked with its victims; whether called cathartics; emetics; diaphoretics; antispasmodics; stimulants, or what not; I say, leeching here has the power of the fabled wand of Ulysses; it is a staff in the hour of difficulty; it is a friend in our utmost need.

Were I to say then, that there is a *point* where local bleeding in fever is more particularly indicated than any other; that in fact it is

as much the peculiar remedy, as when the respective remedies are called for the "blistering point," "bleeding point," &c. I would say that it is especially required when the abdomen is meteorized; *where there is tension of the epigastrium; a tension accompanied or not by pain;* there may be prostration of strength; there may be violent fever; there may be diarrhœa; there may be constipation; medicines rarely ever act here kindly or give relief. In corpulent subjects, it is of little comparative benefit, except from the epigastrium alone, from causes previously explained, and of the two modes, leeching with them, is much better than cupping.

But it has been called "a feeble practice:" to be sure a "dozen of leeches and a little gum water," would be "feeble practice," in some cases. But apply fifty or one hundred *pro re nata*, and repeat as often as paroxysm returns, and instead of drenching with hot teas, give cooling lemonade and cold water ad libitum; apply cold when too much heat, and you are not only using the most powerful practice that ever was applied to the treatment of disease, (if a difference be allowed between rash violence and scientific prudence,) but the most grateful, and the most successful, and I think, the most reasonable, of all means, in the solution of fever, *whatever routine practitioners may say who never tried it.** It is accommodated to the difficulties you have to encounter. You apply the remedy as near the diseased organ as possible, without embarrassing the action of an important viscus. You apply it too, to an external non-vital surface, (as it is called,) in preference to jeopardizing an important internal vital one, whose energies may be wanting in a greater extremity. The remedy to, is not of that perturbating, revolutionary character, which like the remedies in political life, to correct an abuse would overturn in its sanguinary course and destroy all the foundations of society; but like that mild and sanitary character, which wisdom has devised for the application of the salutary principles of the law, (within constitutional limits,) to some of the inevitable evils of the social compact. The first is uncertain, and the risk often greater than the benefit; the last appeals to human reason, and only fails with the imperfection of science, and however gratifying it would be to aspirants after professional fame, to take a disease by storm, yet sober reason as well as experienced judgment, will dictate an abidance to those physical laws by which the system is governed, and its diseases understood; and safely and scientifically removed. All else, is but the inflation of the inexperienced and the promise of the empiric; never realized in actual practice; the victims of the course have marked their footsteps, and their errors are concealed only by the silence of the grave!

The theory of the action of cathartics, emetics, diaphoretics, &c. in accordance with the views presented in this paper, is to equalize

* "The only way to become acquainted with the properties of any remedy, and the states of the system to which it is adapted, is, not to theorize about it, but to *use* it, and to observe the effects which it produces."—*Caldwell.*

action; to remove an existant irritation in one part, by exciting secretory depletion in another; to antagonize a healthy organ against a diseased one; to substitute an artificial, controllable irritation, for one set up by causes not always under our controul; and sometimes to remove offending materials from the bowels, by an increase of peristaltic action, whose influence would be more injurious than the action itself. They are a species of *capillary depletion*, made through the means of the sympathies on the great secretory and depuratory emunctories of the body; they thus have the effect of equalizing excitement, restoring the harmony of action existing and necessary between all the glands; and thus enable the recuperative powers of the economy to restore itself. This, however, is the most favourable view of the subject. It is assuming that the stomach and bowels are either healthy in their actions, or but slightly deranged: but if they should be in a state of high irritation or inflammation, as is most usually the case, (and here is the great radiated and radiating point receiving the influence of the impressions on the organic system,) the effect of medicinal impressions is very different. They then make a local, confined impression; increase an already existing irritation, and do not awaken the sympathies. The organic sensibilities of the stomach are not then in relation with the organic sensibilities of other parts; there is no association between them; digitalis will not then affect the circulation; diuretics the kidneys; nor mercury the salivary glands; nor will cathartics purge, (taken by the mouth.)

There are three modes then of arriving at the same point—1st, by capillary bleeding; 2d, by acting upon the secretions; 3d, by cathartics and emetics, (independent of mere secretory action.) The first has been spoken of above; it is believed to be the safest, the easiest, the most speedy and natural, and always at command, acting upon a controllable and comparatively unimportant part, for the relief of one essential to life.

The second is, in the first place, *dangerous;* for you run an equal risk of increasing or decreasing a secretion, as you cannot be certain of the state of a gland, and increase the action of a gland beyond a certain stage, and all secretion is arrested: secondly, it is not under our *command;* we cannot force secretion; it will take place only in a certain state of a gland, its nervous and vascular state, being in a certain relation to constitute its organic sensibility—all acknowledging the well-known physiological as well as pathological fact of a *secreting point*, below or above which state secretion does not ensue: thirdly, it is *uncertain* and *precarious;* for it is impossible for us to tell, *a priori*, according to our present state of knowledge, the precise state of a gland, and none of these effects can be calculated on, when the stomach, (the receiving organ,) is in an inflamed or highly irritated condition: fourthly, the rapidity of our diseases is such, (terminating in from one to seven days,) that we cannot wait for this slow and doubtful method; and in proportion to their rapidity is their violence and danger, and in this ratio is the existence of a high inflammatory local or general excitement, in which secretion never

takes place. The state of the stomach and bowels too, determine the effect of cathartics, whether irritants or depletants; if they are in a state of high irritation, as is often the case in fever, they add to that irritation; dose after dose is given and increased in arithmetical ratio, and surprise is expressed that they do not operate, forgetting the condition required; if otherwise, or so slight that the stomach has the power of disembarrassing itself, and calling a sympathizing organ to its relief, they act upon the secretions and the contents of the bowels: this course then alone, is desperate enough—it is thrusting in the dark.

Thirdly. Let us see if the course by cathartics, emetics, &c. is any better. So far as they are given upon the principle of acting upon the secretions, the above objections will apply to them: but there are other views in their exhibition which must not be overlooked.

The system of giving cathartics, &c. is deeply interwoven with the prejudices, not of the profession, but of the people. Is there head-ache? You must take a cathartic. Is there pain in the abdomen? You must take a cathartic. Are you constipated? the same. The same is the case if the disease be diarrhœa or dysentery. Is the tongue furred? the same. Whether it be the finger-ache or pain in the big toe, your system is still inflammatory; you must submit to the same inexorable prescription—the cathartic! The impression is felt, (without either much reason or reflexion,) that there is *something* offending that is to be discharged; whether "bile," "acrid secretions," or what not, the cathartic and most probably calomel, must be given. "It acts upon the liver," whether that consists in excess, deficiency, or vitiation; it "blows hot and cold" with the same breath; it is like the homaopathean doctrines of Hahnemann—*similia similibus curanter* with this *trifling* difference, that the former gives hundreds of grains, where the latter gives millionths and billionths parts of a grain! Which is the most reasonable? But again; *secretions* must bear such a relation to the *secreting part* or surface, that it would be absurd to call it an *irritant* to *that surface*, and the relation must be the same, whether diseased or not. Another ground assigned is, that as a stronger irritation may be substituted for a weaker, (constituting the disease,) from the old aphorism—"*de duobus doloribus simul obortis vehementior obscurat alteram*"—a violent cathartic is administered, regardless of the conflict with the constitution; the delicacy of the structure to which it is applied; the necessary injury to the individual at each repetition, and the thousand multiplied forms of gastro-enteritis in indigestion, dyspepsia, bilious and nervous affections, in all their protean variety.

The very principle of giving cathartics indiscriminately, or rather the practice without principle, in a measure defeats its own end; an impression is made by them upon the mucous or nervous coat of the stomach and intestines, and thence the muscular coat produces its peristaltic motion, and in proportion to its intensity and the excitability of the part, do other organs, in sympathizing connexion with it

secrete; it is doubted whether there can be any such thing as a *simple peristaltic motion*, the impression producing it confined to the bowel itself, for even our blandest aliment produces an increased secretion of bile and other fluids; what then are we to expect from an article whose peculiar property it is to *increase* these very *secretions*, and they all irritate, from manna to the croton tiglium, and in that proportion do they not only injure the mucous membrane, (with the exception when the irritation is light and limited, the depletion itself relieving it,) but the impression is transmitted to the associating organs, liver, &c.; they, if not over stimulated beyond the secreting point, pour out their contents, and increase the *very consequences* they were given to remove, the *eternal offending bile*, the imaginary cause of most of the ills flesh is heir to! hence then the more cathartics are given and particularly calomel, the more bile and "vitiated secretions" are produced.

It must be obvious, that previous to increased or diseased secretions, there must be *excess of action* in the secretory apparatus. The obvious indication then will be, to *reduce this action;* not merely to remove one of the *consequences* of it; the effect being mistaken for the cause, the sole object seeming to be to adapt remedies to the *post hoc* not the *propter hoc*—to the *consequences of disease*, not to the *disease itself.* The mode has been pointed out; capillary depletion in the vicinity of the diseased organ, mucilaginous diluents and fomentations and general antiphlogistics: if they are incompetent, or if the system is too much crippled in its recuperative powers to acquire the equilibrium of its functional actions, you are to use revulsive means to other parts sympathizing with it, and thus restore its harmony. This mode cuts short disease in its progress, without regard to duration. It attacks it at its root, while the other only lops off the branches. The striking simplicity of this course, recommends it to the adoption of philosophical observers. It is the characteristic of those laws, which Providence has ordained for the regulation of the universe. Deeply rooted as humoralism is, in spite of theory, principles, and pathological research, these with time, experience, and their application to practice, must be assiduously used, to expel their pernicious errors, to remove the obstacles, to correct practice, to establish it upon a fundamental basis, and to apply the immutable laws of the system to the explication of pathological phenomena.

The evidence of the course of drastic treatment, the polypharmacy of the English, can be traced in the mortality that has followed their footsteps throughout the world. This has been unjustly attributed to the varied climates their enterprize has carried them to. Very different has been the fate of the French, similarly exposed; they have not added to the effects of climate upon the great intestinal mucous membrane, but by ameliorating its influence, by mucilaginous diet, and avoiding drastic purges, &c. they have truly "mitigated the ills they could not shun;" and the great difference in the health of the two nations in warm climates is particularly conspicuous, and can only be accounted for by the greater *temperance* of the latter in eating and drinking, but particularly in *physic*.

The author of the distinguished essay on yellow fever, before referred to, recommends the use of tartar emetic in the ataxic stage of yellow fever, to produce reaction, and states that "*where secretion is freely produced,*" great benefit is the result. In what proportion this effect ensues is not mentioned. In the ataxic stage of all diseases, there is a "broken state" of excitement in the system. The harmony of the functions of the various organs necessary for the due maintenance of healthy action, is secured. The balance of action is destroyed. There is undue and irregular distribution and determination of excitement and of fluids to particular parts to the injury and loss of others. The indication then must be, to discover to what parts is there undue determination, or where excess of action, and to equalize them; to repress violent action, and produce it where it does not exist. The first is accomplished by capillary depletion; the second by derivations and revulsives; by acting on an organ in the closest sympathy with the crippled function. This can only be done when the engorgement or paralysis of function exists to a certain extent; if very great, and the impression violent, the sympathies cannot be awakened; there occurs prostration of the vital forces and activity of the tissues and depression of organic actions to the lowest ebb, by the extent and intensity of the congestion if suddenly induced; here the sympathies connecting organ to organ are overwhelmed and paralyzed; in these extensive congestions, where a great portion of the sanguine fluid is confined from the circulation, (a real depletion,) producing a weak and small pulse, local bleeding, and particularly by cups, which are powerfully revulsive, relieves this state, produces a more free circulation, opens the pulse and enables us to bleed from a vein, and thus entirely relieve the condition; such results ensue from their use in intermittent fever and the cold plague, and such doubtless would ensue in cholera, where the blood is entirely confined to the internal viscera, concentrated particularly upon their mucous surfaces and overwhelming their functions. These are states where internal medicines are useless. Capillary depletion often unlocks this state, liberates the circulation, developes the sympathies, and gives no controul over its actions and sympathies. This, with the hot mustard bath to the extremities and superficies, will soon enable us to equalize action, and to perfect and render it durable, we have only to exhibit such medicines as produce a continued drain from the secretions, and the lost balance will soon be restored.

My experience too, is decidedly opposed to the extent of the existence of the "diseased secretions" and particularly of bile, for which *facts* being wanted, are assumed, so much spoken of, and their necessary requirement, cathartics for their removal. *How* they are produced is not said, and it is very difficult to conceive, that a part, or gland, whose appropriate function it is to elaborate a peculiar fluid, should under the same apparatus of nerves, blood-vessels, &c. secrete a *something* that is very different. An organ must make whatever is the result of its organization, conformably to its own laws. There must be a relation between the secretion and secretor. The latter cannot form or produce a substance that is injurious to itself, or to

the situation it was intended to occupy in the economy. Tears do not affect the eye, or the gland that secretes them. The same is the case with regard to the salivary glands and mouth; with the urine to the kidneys and bladder; with the pancreatic and gastric juices to their appropriate positions; and of course, the bile to the liver and intestines. These, in a state of health, are intended to answer certain ends in the economy, and therefore do not irritate. In a state of disease, the relation is so far different; not with regard to the secretor and secretion, (for they must always bear the same relation to each other,) but with respect to the *surface*, on which they are spread in the performance of the duty referred to above. Thus, in the diseases of the intestines and bladder, the secretions from the liver and kidneys, which before were bland and innocuous, being now applied to *irritated parts*, whose relation to them is changed, become a source of irritation themselves; and it is demonstrable then, that the indication will be to lessen the *irritable and excitable state of the part, and not to increase the secretion that is already offensive!* and as this assumed vitiated secretion is the result of the organic action of the secretor, the object of attention is the antecedent, not the consequent, and if these denaturalized secretions increase the irritation of the gastro-intestinal mucous, will you cure them by applying to the same super-excited surface the most powerful irritants, (drastic cathartics?) The principal evidence of "diseased secretion" that is relied on, is that of change of *colour* in the bile. This may be produced by the fermentation of the various drinks taken by the sick, and not being digested, (that function being arrested or impaired by indisposition or disease,) *chemical laws supply the place of the vital;* fermentation ensues; acid is produced, and this acting on the bile, changes its colour and produces wind, colic, distention, uneasiness, malaise, which a cathartic that is mild, to a certain extent, removes. This then is the ground, in a great measure, of the popular belief in their efficacy, and they extend it with the usual generalization to all cases; when black, if not concentrated bile, and this known by its turning yellow on dilution, it is a peculiar secretion from the jejunum,* from the long-continued irritation from cathartics, it is then a critical discharge. *Such discharges are not seen nor such crises, when these irritants are not used;* a proof of the correctness of the explanation of the modes of the physiological treatment. Nor does an increased circulation produce a vitiation of the secretions. Were that the case, not only every fever, but every instance of increased circulation should be so accompanied, which is not the fact. I appeal to all faithful observers, to all who have attentively watched the bedside of suffering humanity, unprejudiced by preconceived theories, and untrammelled by education, whether "vitiated secretions" are constant and invariable attendants, even on fever; whether, in fact, furred, dry, or red tongue, thirst, or depraved taste are not the effects of irritation or glandular derangement, independent of "vitiated secretion," as it is called by

* I have very often verified this on dissection.

routinists? Whether the much vaunted "vitiated bile," if it exist at all, is not as a thousand to one, more often the effect of the medicines administered and the accompanying drinks, than of the fever? Whether it is at all unusual in the physiological treatment to witness all the stages of fever without remarking any variation in the secretions from a state of health, except sometimes as to quantity; and that turbid urine is much more often witnessed in other derangements of health than it is in fever? Why is not complaint made of the effect of vitiated secretions in acute and chronic bronchitis or pneumonia? There is no secretion so frequently deranged as the urinary, and yet it produces a very slight effect on the urinary bladder and urethra, except as calculous deposits, and then only mechanically, and what becomes of the pernicious secretions, which, according to the authority, produce such injurious effects in intermittent fevers, yet the paroxysm being terminated, perfect quiescence ensues. It is a general fact, that pretty much as the bowels are let alone, so are their secretions natural. Dr. Eberle says, "that in all febrile affections, secretions poured into the intestinal canal are unnatural and vitiated; that this vitiation can even occur without the existence of irritation of the secreting organ;" and admits, "that the soothing plan of treatment recommended by Broussais, would, no doubt, be much more salutary than the *vigorous* purgative plan, so commonly pursued in this country and in England," with the view of ridding the intestines of their "vitiated secretions." If for "irritation of the secreting organ," was read, "irritation of the intestine," the theory would correspond with his recommendation, viz. avoidance "of the vigorous purgative plan," &c. It has very often happened to me to be called to cases of fever with great disturbance of the intestines, with thin, watery, yellowish discharges of what is called "bilious vitiated secretions," with thirst, tenderness of abdomen, &c. to beg a truce for a day, and to give mild emollient drinks, and apply emollient cataplasms, and avoiding irritating purgative and the sedentia; and on the second or third day what will be shown me but a "mortal case."

Admitting the general fact, in a very qualified manner, that there may be occasionally alteration of secretion from its natural condition, I am far from believing, that this is in proportion to the irritation; it must depend altogether upon the change in the organic actions, it is still not admissible that these are always altered with the species or amount of irritation; were it so, man subject constantly to an infinite variety of irritations, would seldom have the same glandular products; but as organic actions depend upon the peculiar organization and organic susceptibility, and acting normally only under a peculiar species of stimulus; hence then, at least, these varieties must be definite and limited to a narrower range than is generally allowed. Vitiation of secretion is the great bug-bear and apology for every species of polypharmacy, and it is highly desirable and important, in a practical point of view, to restrict it to its proper limits.

It is very true, that a large discharge of bile in fever, whenever it is effected, produces much relief. It shows the influence of revulsion

upon that organ; it is of the largest size, and the colour of the secretion makes it more noted, whilst others pass unobserved, and hence then the monopoly of faith in all important "bile!" No physician who has not experienced it, can form a just idea how small a quantity of cathartic medicine is absolutely required in the treatment of fever; and the only way to become fully sensible of the unnecessary and disadvantageous irritation which it excites, is to witness the progress of cases treated without them. Emetics sometimes relieve light gastric irritation and fever, by the free secretion from the diseased surface, thus establishing an artificial crisis; or by irritating a portion of mucous surface, not yet diseased, and thus procuring relief upon the principle of revulsion, or by the depletion from the cutaneous surface, producing a critical diaphoresis. These are *chances*. Should they not occur, (and we cannot *command them,)* injury is inevitable. In slight or moderate cases, the emetic often relieves by the above revulsive effects; but they sometimes prove fatal, and there is no foreseeing the result. But just in proportion to the intensity of the gastro-enteritis, so does the probability of revulsion, or secretion from other tissues, diminish. This coincides with the laws of the system, by which membranes *cease secreting when excited to a certain point*, and the probability of revulsion is less just *in proportion to the violence of the case.*

Experience, too, convinces us that purgatives are given in vain in an inflamed or highly irritated condition of the bowels, and that they deepen the fur on the tongue, and aggravate the case. This fact is admitted by the great opponent of physiological medicine, in his late work on the practice of medicine*—"*that the longer you give purgatives, the fouler does the tongue become, and the more distressed the stomach; the symptoms, in short, of intestinal impurities become more and more conspicuous, whilst he continues to dilute and evacuate, without reflecting or knowing that he is himself the cause of all the noxious matter in the intestines by constantly irritating* THEM *with his purgatives, and keeping up an afflux of fluids to the internal or villous coat"!!!* An admission corroborating the conclusion drawn from his recommendation in the preceding page! In such cases pill after pill, may be piled upon each other in vain. Each successive one adding to the irritation of its predecessor, for in proportion to this excitement or inflammation of the mucous membrane, so is the peristaltic power destroyed; and hence, in such a case, the utter insufficiency, and indeed the great injury of cathartics, and the larger the dose the greater the mischief; increasing the irritation without increasing the prospect of producing such peristaltic motion as would remove it. It is in such cases as these that capillary bleeding evinces its power in subduing this inflamed condition; it acts like a charm in opening the bowels; the first proving the condition, and the latter removing it; the pathology indicating the treatment, and the treatment proving the pathology. The same, and not

* Vide Eberle, page 94.

a less astonishing effect, ensues in some advanced conditions of fever, when to frequent, thin, watery, yellowish stools, is added a harassing remittent or continued fever, with meteorized abdomen, white tongue, pulse 90 to 130. The effect of capillary bleeding here, in speedily removing this distressing and dangerous condition, is as speedy as surprising. Indeed, I have often witnessed patients in such cases, apparently snatched from the very jaws of death by them; and have rarely witnessed more gratifying results from the practice of our art, than I have from the application of this mode of practice in the cases indicated.

The importance of the gastro-intestinal mucous surface, its rapid participation in most of our affections, and the great liability to be aggravated by irritating medicaments, administered for the relief or removal of diseased action, are strong inducements to limit the application to them of curative means only where they are free, or nearly so, of irritation themselves; and fortunately for the safety of innumerable cases, endermic medication has stood the test of repeated experience, based upon an improved knowledge of the many important physiological functions of the skin, and the close and intimate sympathies which connect it, not only with the great ganglionic system of the abdomen, but especially with its development on the gastro-intestinal mucous surface.

And what are the much vaunted "crises" of authors; the point where hope terminates in life or death? It is that state of the individual which ensues, when the irritative treatment having been carried to the extent of exhausting the irritability of a part, death and disorganization must take place, unless depletion, from secretion, ensues to relieve it, and from the course of treatment the *chances*, (for they are really such,) are pretty equal, dependent on the stamina of the constitution, the violence of the disease, the treatment undergone, and the vitality inherent in the part. It is the desperate game of the gambler—all or none; but even if life is preserved by the fortunate throw, the foundations of the constitution must seriously suffer in the mortal struggle, and the impairment of its energies is seen in the gastro-enteritis, (dyspepsia in its thousand shapes, the mimoses, as they are called, for they mimic every complaint,) that are every where crowding on the attention of the profession, and especially its effects, are seen and felt in the south, where to the influence of climate on the digestive organs, is superadded that of the treatment.

In using stimulants of various grades and characters, (as cathartics, emetics, tonics, soup, grog, segars, &c.) it appears at first surprising that the exhibition of one should require another, or it seems that for a time, one frequently remains or palliates the injurious effects of another, and an argument is deduced from their not being *always fatal*, that they are proper. But the same might be said of any poison. It is probable their effects are explicable upon the principle of their acting upon different organs, or parts of the system, and expend their otherwise injurious influence, in equalizing excitement; but to the ultimate injury, and wear and tear of the system, and im-

pairment of restorative energy, as proved by the short lives of those indulging in those excitants; their greater liability to be attacked by disease, and the infinitely *less chance* they have of surviving when so attacked, the opposing barriers of a sound constitution no longer existing. The objections to the course, however, arise from their being used empirically; prescribed in unknown states of the system; that the greatest uncertainty must arise from their use not being under our controul; that it weakens the whole system, and wears it away; cripples and destroys its recuperative powers, and impairs its future energies. Hence the great debility after the usual course of drastic treatment, by cathartics, by mercury, &c. requiring tonics for its removal; while, on the contrary, the physiological mode of treatment, the theory of *diminishing action*, rarely ever requires them, and the dropsical effusions, and chronic half-cured derangements, the frequent effects of the former, are unknown to the latter. It is freely acknowledged that in many cases, with phlegmatic temperaments, where the sympathies are not active, with negroes, with sound constitutions, where revulsions upon the lower bowels are easy, or upon some secretory gland, as the liver, and with pale tongue, or simply furred, the common purgative treatment will often answer. Hence, then, there are cases where each may be equally adapted, and a physician may practice either, according to the case, and in conforming his practice to either, evince the profoundest skill. The apparent contradictions, then, in the practice of the different modes, are not real. The absurdity of a man's sticking to one in every case, is obvious, and the sweeping denunciations of the profession from apparent differences in practice, arising from principle and real skill, are very unjust.

It is not to be concluded from what has been said, that I am altogether unapprised of the great value of cathartic medicines. My objections are to their indiscriminate application; and I have freely stated the grounds of these objections, and trust they will be liberally examined by my brethren. As aperients to remove ingesta, colluvies from the bowels, and some cases of light irritation, as modes of acting upon the secretions, when that can be done with safety, as revulsive irritants and derivatives in a numerous class of important diseases, they form some of the most valuable weapons in the armoury of the profession.

It is by some supposed, that in warm climates larger doses of medicine are required than in others. Whether the theory arises from the custom, or the custom from the theory, is not material; the habit alone would seem to require its repetition. From the excessive action produced by heat, an inflammatory state of the system is induced; the functions are performed with difficulty, or not at all, and large doses are often given in vain. Not that it is proper, (for if this state is first reduced by capillary bleeding, the smallest doses only are required,) but as desperate temerity is not always followed by fatal consequences, and as success sometimes follows without being *caused* by it, it is attributed to the rash administration. It makes the gaping multitude stare at what they call the Doctor's "boldness and decision,"

and the laurel is worn, though it may have cost more victims, than that which decorated the naked brow of Cæsar. It makes me shudder when I hear of "heroic practice;" heroism in war is built upon the slaughter of our fellow creatures; it is little less in physic. This mode of excessive drugging, miscalled *strength of practice*, as if *this* was to be estimated by *size of dose;* as if all skill in physic was to be reduced to the exhibition of quantity; that disease is to be taken by storm; that "nature is to be turned out of doors like a troublesome intruder;" that it is in the power of feeble man or all-potent physic to produce whatever action we please! Surely the age of miracles is not yet gone. Doses of medicine are to be graduated by the susceptibility of the part to which they are to be applied, increase this and it is necessary to *lessen* the dose; to an inflamed intestine it would be highly improper to exhibit even the ordinary dose. What is often called "torpor," and "want of action," is most often a state of a part where its usual functional relations and action are superseded from *excess of action;* and again, there is a condition of a part whose "torpor" arises from a deficiency of action in which it would be almost certain extinguishment of vitality to use these excessive stimulants; and a frost bitten limb is a familiar illustration of it; the adaption then of *dose* requires the exercise of the greatest skill, and it is the misfortune of the profession that the exhibition of large doses should entitle him to the appellation of "a bold practitioner," who instead of studying and adapting the quantity of the article to these delicate shades, overwhelms irritability by the magnitude of his dose, and nature is blamed for his rashness. The ridicule of leeches and gum water, can be well retorted upon those,* who use little else than calomel, aloes and scammony; who in almost all the morbid states of the system, discover nothing but "congestion of the *vena portæ.*" Is there bilious fever? there is congestion of the *vena portæ.* Is there dyspepsia? there is congestion of the *vena portæ.* Is there menorrhagia? the same. The same of amenorrhœa, of uterine hæmorrhages, of dropsy, of gout, &c. Here is "unity of disease," with a vengeance; *uno morbo; uno remedio.* Here is simplicity without truth, and uniformity without principles. They talk of emptying the "portal circle," as if they had it in their power at once to open the vena portæ; forgetting they have to act upon a GLAND, and *never directly*, but through the medium of sympathizing organs, and that its secretions, (the liver,) are to be acted upon on the same general rule or principle and special influences, as regulates the functions of other glands.

The theory of the application of BLISTERS in fever is explicable upon the same general principles that have been attempted to be established in this paper, with regard to the influence of external impressions on the skin, and their repetition on the gastro-intestinal mucous, dependent greatly upon vicinage and influenced by the varied state of the system at the time, and particularly whether a parenchymatous

* "It might not be amiss to recollect that dogmatically to denounce practice, instead of attempting rationally to correct it by pointing out its errors, partakes as little of good sense, as it does of good feeling."—*Caldwell.*

organ is affected or a mucous surface. I wish to be understood to speak very emphatically and particularly of the effect of blisters to the epigastrium, for my experience authorizes me to be very decided. I have found their influence to be to increase general excitement; thirst; dryness and redness of tongue, coldness of extremities; delirium; and subsultus tendinum. Indeed, their effect are so unequivocal as to aid much in the establishment and illustration of my general principles. There are doubtless cases, where blisters to various parts of the abdomen have been not only harmless, but have done great good. With pale or loaded tongue; but little thirst; the circulation but little affected, (and particularly if a parenchymatous organ be the seat of disease,) in some cases of protracted adynamic fevers; in some periodical fevers, (when applied before the paroxysm to *prevent* its return, not to cure it,) and in some cases of vomiting, their *rubefacient* effect has been beneficial; but never when this vomiting is from inflammation of the stomach; when the tongue is red and dry, or there is much thirst. "Les hémorrhagies intestinale, dit le Professeur du Val-de-Grace, veulent un vésicatoire sur l'abdomen, parceque ces hémorrhagies produisent une anémie des viscères qui empêche le vésicatoire d'être nuisible" Prop. 341, "les vésicatoires, augmentent souvent des gastro-enterites, parceque l'inflamation qu'ils produisent ajoute á celle de la muqueuse digestive au lieu d'en opérer la revulsion;" vide Examen. "On ne doit jamais employer les révulsifs tant que la phlegmasie que l'on veut combattre est accompagné de fièvre; car alors elle est trop intense pour que l'irritation artificielle puisse l'enleve, et les sympathies sont trop active pour que celle-ci ne tourne pas tout entière au profit de l'organe déjà irrité, parcequ'el est alors tres susceptible de recevoir un surcroit d'excitation;" Goupil. But in cases of yellow fever, I look upon their application to the epigastrium as absolutely fatal, and in bilious fevers generally injurious in proportion to its grade. Their beneficial effects, (as has before been said,) are always accompanied with depletion.

The administration of DIAPHORETICS is susceptible of the same explanation. Of the theory of capillary depletion from the depuratory exhalants, furnishing relief in proportion to its connexion by sympathy with the organ suffering lesion, the skin is an index to the state of the internal organs. Is it cold, clammy, warm, moist, dry or rough? There is immediate mental reference to some internal lesion or irritation, and if there is any confidence in the treatment prescribed being the evidence of opinions, we must infer a general belief in it, and this assurance never deceives us. Sudorifics, like cathartics and emetics, can only be properly administered when the receiving organ, (the stomach,) is free from phlogosis or irritation, otherwise we run the risk of increasing it; for they all irritate or produce injury, when they do not produce a revulsive secretion from the cutaneous exhalants; dry and parch the skin, and produce nausea, head-ache, restlessness, &c. The best sudorific is to remove that state of internal irritation or inflammation to which the dryness and

heat of skin are attributable, and local bleeding in the vicinity of the diseased organ, and cold applications, are the most immediate and direct.

Much has been written, and much conjectured upon the subject of the action of MERCURY upon the system. Some by practical men, but much more by closet speculators. My knowledge of it has been derived from a long and extensive experience with it in the diseases of this climate, while bending under the authority of great names, having the current of popular prejudice in its favour, and unprepared by experience to test its value or its truth. Repeated disappointment, its occasional great ravages upon the constitution; constant and intense observation of its effects; an anxious desire to mitigate its ills, and to supersede its application; and an acquaintance with physiological medicine, and some years experience of its application to practice, enables me to assure my less experienced brethren, with great confidence, not only that it has been much abused and empirically used, to the great injury of health and life, but that the most violent and gigantic diseases of this climate may be not only cured without it, but *much more safely and efficaciously controlled by other means;* and that the proper theory of its administration, if understood, has not been properly applied. I am far from undervaluing its real, its occasional great effects; but to have these properly appreciated, it must be adapted to proper times and places, and given upon proper principles—otherwise, such is its power, it will prove but as a firebrand in the hands of a madman.

I proceed then to state the result of my observations. In concurrence with the views here presented, it is believed that it only acts beneficially, when it acts on the secretions. The principle then, is a revulsive; whether it is upon the liver, upon the salivary glands, upon the kidneys, or elsewhere. Upon the two first, it is supposed to act specifically; that is, its qualities are in accordance with their organic sensibilities. But to have this effect, as its primary action is on the stomach, as there are no means of applying it to these organs *directly*, its influence or effect upon them, is either dependent *upon the integrity of this organ*, or its *power of transmitting the impressions.* For here is the *punctum saliens;* the great operative centre, as it were, of organic life; and we have extensive pathological proofs of this important and valuable fact. For when this organ is extensively and deeply irritated or inflamed, it has not the power of disembarrassing itself, and calling upon sympathizing organs to its relief, substituting their increased actions for its own. The correlation is in a measure suspended; the sympathies are dull and inactive, in proportion to its violence and intensity. The effect then, must be a local one, and hence in the worst forms of yellow and malignant bilious fever, the *extremity where the remedy is most needed*, it seldom fails to disappoint us. "L'irritation établie à titre de révulsif doit toujours être assez intense pour enlever celle à laquelle on l'oppose."* It being

* Goupil.

a generally admitted fact, that in proportion to the degree of the *local affection*, so is the difficulty of effecting salivation, and the cry is, "oh! if only the mercury would take effect"—"if only I could salivate him," &c. True; but here it never does, and for the reason above given; were it to have that effect, it would only prove *the mildness of the disease!** Hence then, it is vain to expect relief from mercury in severe cases. In mild ones, we have a more safe and less hazardous remedy; and hence it is not only unnecessary in most cases, but by the use of it, we are subjecting our patients to a certain risk, and to a sure injury and punishment gratuitously. The same difficulty occurs, though of a different kind in salivating children. The action of dentition must be superseded by one of superior power, and such is the violence often required for this to ensue, that the most frightful sloughing, and often loss of life is the result.

There are two modes then for mercury to act upon the system, one upon the glands, the other upon the mucous membranes. When upon the first, it acts revulsively, the depletion, (secretion,) often relieves the suffering, the irritation or inflammation for which it was given, and benefit results from its use. When, however, no gland sympathizes or relieves the organ receiving the impression, it acts as a *poison* upon the part. It is *here the disease of the remedy*, producing a cotemporaneous, not a revulsive influence. The mucous membrane suffers, is corroded and absorbed; that of the mouth, from its close and intimate connexion with it, suffers likewise; gangrene ensues, the teeth drop out, and death often closes the scene! This is the result of using mercury improperly, or in excess. Dissection has confirmed me in these views. The mucous membrane of the stomach, as well as that of the mouth, was actually, and to a considerable extent, destroyed, (absorbed,) the ulcerative process being precisely similar to that in the mouth, in a case carefully examined after death, (from excessive use of mercury,) with a special view to this result. Mercury then is a powerful irritant, producing febrile excitement in proportion to the frequency of its use and the quantity used, by acting upon the mucous membrane of the stomach. Those in the habit of frequently using it, requiring less to affect them; its frequent and long-continued use producing a state of chronic irritation, which it is extremely easy to renew, rendering the system remarkably irritable; liable to be influenced by atmospheric transitions with more than barometrical certainty; various forms of chronic gastritis and hepatis; while in others, according to temperament, developing in the lymphatic, scrofulous affections, in the nervous, neuralgias and palsies; in others, bony concretions, and pains in the bones and swellings of the joints; attacking the fibrous system in others, developing rheumatism and its various

* In proof of this fact, numerous authorities, (most of them deriving their experience from the West Indies and other southern sickly latitudes,) might be cited. It is sufficient for our purpose to mention the venerable veteran, Dr. Robert Jackson, one of the most experienced and accurate clinical observers of the age, who has given it his decided concurrence in his work on "febrile diseases," Vol. I.

kindred affections. The impression then is clear to me, that it only acts beneficially when its action is spent revulsively upon some glandular apparatus, whose depletion is a temporary relief to the system from its otherwise injurious effects; and that when this does not take place, it always injures to a certain extent; sometimes within the recuperative powers of the economy to remove, when it is not perceived in others, the constitution suffers in some one of the forms indicated above.

Again: cold water and cold air, in common experience, tend to develope mercurial action in those using it. This effect probably ensues because their tendency is to *lessen fever*, and those *local inflammatory* irritations whose *influence prevents*, according to *their intensity*, the *revulsive influence of mercury*. The same effect takes place from the warm bath, though more rarely, because it is seldom applicable to these cases, but just in proportion to its lessening the violence of existing irritations so is the liability to mercurial action. Sulphur and the warm bath also tend to relieve the system from the undue influence of mercury, from their revulsive action on the depuratory exhalants, and not the former from the hypothetical influence of neutralization.

It is a common excuse for the application of this powerful drug in fever, that "the liver is affected," without stating the *nature* of that affection, and no matter what is its nature. My experience with the diseases of this climate, neither allows me to admit the fact, or consequence, if so affected; believing that it is rarely, if ever, primarily affected, but that its partaking of diseased action is often the consequence of the exhibition of drastic purges, and particularly calomel, not only from association of action from the part to which they are directly applied, but to their irritating the mouth or end of the gall ducts terminating in the intestine and transmitting the irritation to their origins according to the beautiful discovery of Bichat. But the state of this organ must be assumed for it to produce secretion, from its partaking of the phlogosed condition of the greater part of the system over which the ganglionic nerves more immediately preside, arises the precarious uncertainty of this secretion in fever, and the perturbating, violent, and often desperate efforts used to produce it, mistaking a *phlogosed condition for torpor;* these irritants usually adding to that condition and rarely taking *effect until this state is worn down*, or the *excitement removed by some other depletion.* When however they do act on the liver, and produce a full secretion, it is freely allowed that the revulsive depletion greatly relieves; capillary bleeding opposite is the best means to reduce it to this point. Hence then mercury is no more a catholicon for all affections of the liver, than bark is for all fevers, digitalis for all diseases of the lungs, or than it is for all venereal affections.

I have rarely, if ever, found the liver diseased particularly; either too large, too small, or otherwise affected, so far as I could ascertain, after death, from fever alone; or the bile, except sometimes, and that very rarely, in too large a quantity in the gall-bladder, and that in-

spissated and like all concentrated bile, dark-coloured. But usually, I have found the gall-bladder half full; the *black matter*, (so much spoken of,) always found in the intestines, and particularly in the jejunum, having a marked difference from that in the gall-bladder. It is here all irritants act; it is here, we always find in fatal cases, marks of inflammation. I would say then, that the black matter, which is considered so important and critical in our bilious fevers, is usually, if not always, from the jejunum; seldom, if ever, from the liver. I have never seen it there on dissection, but often in the former; the dark matter found in the gall-bladder *specifically* differing from its becoming yellow on dilution, it being from the jejunum as much a secretion as the black vomit is from the stomach.

It is the opinion of Professor Chapman, corroborated by the experience of a distinguished writer, Dr. Cheyne, and of Dr. Somerville, "that a free use of mercury produces jaundice;" and he attributes the great prevalence of chronic hepatic affections in some portions of our country to the extravagant use of mercury. There can be no doubt of that fact with regard to this portion of the country; and he accounts for it most reasonably and satisfactorily; that it is a specific to the liver; that all high and frequent excitements are necessarily followed by collapse; debility; producing languor in the portal circulation, resulting in congestion and eventuating in induration and more serious disorganizations; that its *salutary effects* are to be ascribed to its acting on the *biliary and other secretions;* failing to do this, it proves inert and unavailing, and causes a train of more serious consequences; that given in large doses it frustrates our purpose by overwhelming susceptibility, leaving the alimentary canal and liver in the torpor of indirect debility, a pernicious state of irritation, a positive phlogosis with an irregular febrile movement. Nothing is more common in practice, as well in as out of the profession, than to hear all complaints referred to the liver. This *disease of the liver in theory*, this hypothetical assumption, has been more destructive to constitutions, than any single cause I could enumerate. It has been at once the cause and apology for nearly all the abuses to which mercury has been subjected, leaving totally out of the question that infinitely more important organ, the stomach, whose diseases are to those of the liver, as to frequency and importance as a thousand to one. It is the source of constant errors in practice, and faith in it blinds one to its consequences and prevents the reach after other sources of relief. Is there pain in the side? It is an affection of the liver. Is there pain in the shoulder? The liver is diseased. Does the skin at all vary from its healthy hue? It is owing to disease of the liver. Is the stomach or bowels affected? The liver is the cause. It is the ignis fatuus that bewilders the imaginations of the great unthinking multitude; it pleases by its facility, it saves the trouble of thought, and is a substitute for the labour of investigation.

But does salivation in fever always produce safety? Is it even an evidence that all danger is over? We know it is not in other diseases. Experience has fully solved this question. Numerous are

the cases on record, and many more are known to practical men, of its being no indication whatever, of ptyalism appearing in the intermission or remission, and subsiding with the occurrence of the paroxysm, evincing its little power, and proving the intermittent nature of inflammation, whether we take that of the disease or the remedy; of patients dying salivated; of many others attacked with bilious, yellow, and other fevers, while salivated for the venereal, or for the express view of warding off an attack; of a free and full ptyalism having no influence whatever on yellow fever, of which I have seen many instances. In fact, it is no better than any other revulsion, whether a purge, blister, or sinapism; nor so good, for with two of these we can better controul the time, place, and circumstances. It produces no greater assurance of safety, while a thousand objections will apply to its indiscriminate administration; in the various and complicated affections incident to its use; never certain in its effects, but always liable to be abused, while most others can be used, if not always certain in their influence, there is little jeapardy of their after-effects. They do not furnish the spectacle of toothless jaws, of disfigured countenances, nor the disgusting effluvia of ulcerated mouths; those semblances of living death, that so often mark the victims of the other course. But were salivation always an evidence of safety, you cannot always effect it; even *quantity*, in violent cases, does not even increase the *chance* of affecting the system, but rather diminishes it, since the difficulty depends upon the existence of a violent *irritation* or *inflammation within, and as this does not tend to remove it, it must act as an irritant upon an already super-irritated surface, and increase the very difficulty it was intended to remove.* Dose is doubled upon dose in geometrical progression, until desperation, with blinded empiricism, thrusts down tea-spoonfuls at a dose! The same fact occurs with regard to the exhibition of any other cathartic in an inflamed state of the bowels. You cannot force secretion—violence cannot effect it—quantity cannot command it; the part can only act in accordance with its laws. The whole course, then, is at variance with sound principles, and confidence in it closes the door to improvement, and shuts out the light of truth. It proves a broken reed in the hour of difficulty, and even when its boasted effects take place, there is no greater assurance of safety than from the influence of any other remedy. Disease consists in action, not in humoral *something* to be discharged. Lessen, or destroy the action, and the *something* will cease to exist, or be produced no longer. It is only since the extensive introduction of mercury into practice that we hear of the extent of liver diseases. It is equally, if not more productive than this climate, of such affections. It is truly the vulture gnawing the liver of Prometheus; and to this we have to add to the catalogue of mortality, the numerous *mercurial deaths* that mark the footsteps of this truly "*Herculean agent.*"

The causes which retard the proper understanding and treatment of fever, arise from the "general views" of it, in contradistinction to

its local origin and seat; that it must run a certain course, and cannot be retarded or stopped; from the mysterious and imperfect views and unlimited confidence with regard to the operation, quantities, and effects of medicines. The light of modern science is fast banishing these pernicious errors and prejudices from the investigation of truth. Called to a case of disease, the scientific physician asks himself first, not what will cure the case?—not, with Sydenham, what is the indication?—but what and where is the morbid lesion?—how does the pathological differ from the physiological state? Then follow the indication and the remedy. Unless this train is followed out in the mind, and pursued in practice, and in the order indicated, and just in that proportion that we deviate from it, do we approach the borders of empiricism; and in proportion as we pursue it, enlightened by the dissecting knife, and guided by observation, do we approach a perfect scientific practice. Another error has arisen, from the habit of prescribing a remedy for each symptom of a disease, leaving the main lesion to its progress and fatal termination. This mode of skirmishing—this study of the effects of disease, is unsatisfactory and unavailing. The aggregate amount of symptoms do not constitute a disease. They are only the "evidences of things unseen;" the index—the signals—the sympathizing links—not the disease itself. Were I called upon for my opinion of the relative importance of the means to furnish us information of fever, I would thus graduate them, though none are to be omitted—the feel of the abdomen—the tactus eruditus abdominalis—the tongue—the pulse—the general physiognomy—the state of the bowels, the skin, &c.

The principles of medicine, like the principles of navigation, are uniform all over the globe, wherever physiological man is the same. Though climate has its influence in modifying temperaments and susceptibilities, and the effects of medicines will be varied in a corresponding ratio. Were it otherwise, we should require a school to teach them in every latitude and every state in the Union. It is in vain for closet physicians to dictate to us in the south, what mode of practice will best suit our region. Those who have stood the brunt of "the pestilence that walketh in darkness," for a series of years, should be entitled to be considered the most competent judges. My own experience with physiological practice upwards of three years. preceded by near fourteen years experience of almost every other, entitles me to speak the language of experience, (that much abused term,) and I do unhesitatingly declare, that the practice is much more successful and satisfactory—that I have succeeded in curing numerous cases with it, almost always fatal under other modes; that it is much more grateful to the sick; that it is accommodated to a much greater variety of cases; that none of those frightful consequences succeed its use, which ensue from the use of the mercurial and purgative, (exhibited in the ruined and wasted constitutions, and crippled energies, more injurious than disease or the climate;) that the duration of cases is from one-third to one-fourth less; that scarcely one-tenth of the medicine is required; that, in

fine, the physiological practice, is to the purgative, what temperance is to intemperance. The purgative treatment, the course of substituting a stronger action for a weaker, the mode of producing a "new action," as it is called, is productive of more injury, (if man is made of perishable materials—if action tends to wear away and destroy, in proportion to the use made of it,) than even intemperance itself. The latter is, in fact, an *intemperate* use of physic. Indeed, this habit of excessive drugging for every ailment, however trifling, is, I have no doubt, sometimes done to conceal embarrassment and want of knowledge of the physician, about the nature and seat of the disease, and save the trouble of examination. I now consider the problem demonstrated, that in the worst forms of fever of this country, (the yellow fever included,) neither the calomel nor the purgative treatment is necessary for success; that in fact very little of either is requisite in most cases. In the yellow fever of 1829 here, of ninety-four cases that fell into my hands, seven only terminated fatally—of most of which I have details—several are annexed in the appendix.

It is at the same time the *misfortune*, as well as the *duty* of physiological physicians to speak freely of those errors of practice, which their cotemporaries are pursuing; and which are verily believed to involve an imminent jeopardy of health and life. This is not done for the purpose of retorting upon them, the ridicule and odium with which we have been so repeatedly and unfairly assailed. The bases of their principles are too deeply founded in the healthy and diseased structure, ever to be influenced by such tests as these. It has been within my especial experience, in this most unhealthy climate, to be afforded opportunities of witnessing the ravages of treatment; *quaque ipse misserium vidi*, which I have above disapproved and lamented, as well as of disease; hence then my *authority* to speak, and my *duty* to my fellow creatures, forbid me to be silent. The difference between physiological physicians and others, is not so much the difference each places in the importance of a proper knowledge and a proper use in the practice of physic, of physiology generally, for all soundly educated physicians admit this, but from the relative importance each attaches to the gastro-intestinal mucous membrane; the first locates there primarily or secondarily most of the irritations which the system suffers, and particularly those giving rise to fever, (we should infer as much of the others from the *application*, though not of the *nature* of their remedies,) the mode in which these noxious causes operate has been attempted to be explained, and they think that the super-irritation of this membrane modifies or prevents the action of all medicaments applied to it, to affect particular parts of the system; that this state is known, from the tongue and other symptoms formerly enumerated, and hence they account for the variations in the opinions and experience of physicians with regard to the operations and effects of medicines, while others give them without having special regard to these states. For the truth of these observations, I appeal to practical men—men who have thrown aside the

prejudices and trammels of education, and the restraints of routine, and *have tried it.* It is the duty of those who pursue a new and successful course, to give the result to the public. I concur with Dr. Phillip in the sentiment, "that a physician who has been long engaged in practice, cannot better promote the objects of his profession than by simply relating with accuracy, the facts he has himself observed, and the reflexions they have suggested." All our obligations are to the public and the profession. We are the guardians of the public health. Holding the scales of life and death dependent upon our skill, we are either a blessing or a curse in proportion as we cultivate or neglect our high and honourable calling. Growing wiser every day, why should we stand still while in this age of improvement, all the other sciences are advancing with the current; each succeeding age "looking over the shoulders of its predecessor," and beholding a more extended horizon? In a profession where life is at stake, we want *facts*, not *assumptions;* we want the observation of practical men, not the theories of school men; the science has been too long abused with false data. Ridicule has thrown its shade where truth should have illumined, and humanity has suffered pangs which a more certain experience would have lightened, if not prevented.

Some apology seems due for the length of this essay, but the practical importance of the principles, and their extensive application to the prevention, as well as cure of disease, and particularly their peculiar and extensive adaptation to the worst forms of disease of our sickliest climates, will, I trust, plead an extenuation. If this feeble effort should induce my brethren to pause in their course, I shall be richly rewarded for the time I have snatched from the anxious pursuit of a laborious and responsible profession to bestow on it. I conclude then, in the language of the great Locke—that "truth has been my only aim; and wherever that has appeared to lead, my thoughts have impartially followed." B. 1, Ch. IV.

The following note should have been inserted at Page 46; it exhibits the comparative results of the physiological and empirical treatment in various parts of the world.

The following are extracted from authentic records, to show the remarkable success that has followed the adoption of the physiological practice; other results, equally satisfactory might be given, of experience with it in the West Indies and South America, but the authorities have been mislaid.

In the hospital of the Val-de-Grace in Paris, it appears from the records that from 1800 to 1814, inclusive, the average *deaths* to the *cures* were as 1 to 12 and a fraction, (which is about the average mortality in the Parisian hospitals,) while in the same hospital, after the introduction of the physiological practice, from 1815 to 1820, inclusive, the average was 1 to 28 and a fraction. The average duration of the treatment from 1810 to 1814, was 17 days, whereas from that period to 1820 it had been reduced to 14 days.

In the Military Hospital of Rennes under care of Dr. Rennati, in 1825, of 584 patients, there was lost but 2¾ per cent.

In the Hospital of Pampeluna, under care of Dr. Dommangel, out of 1100 patients only 3 died, being 1 in 336.

In the Military Hospital at Madrid, under Dr. Faure, of 1071 sick, there was lost about 3 per cent.

In the 2d division of fever patients in the Hospital at Madrid, of 376 sick, the mortality was as 1 in 29 6-8.

In the Military Hospital of the Isle of Leon, (division, fevers,) the mortality was as 1 to 21 4-7.

In the Military Hospital of Rocroy, the mortality was as 1 in 29.

In the Military Hospital of Longevy, of 83 patients there were no fatal cases.

In the Hospital of Santa Martha, in 1823 in September, the patients of which consisted of soldiers exhausted in marching in the trenches before Cadiz, of 500 cases, the mortality was only 16, or as 1 in 25.

In Dr. Ferran's practice in Xeres in Spain, it appears that by the old practice he lost half of his yellow fever patients; whereas, since he adopted the new, he has lost only 5 in the hundred!

ERRATA.

Page 4, line 2d from bottom, for "not," *read* "met."
12, last, for "electric," *read* "elective."
17, 27 from top, for "ruin," *read* "run."
22, 40 " between "this" and "like," *insert* "is."
24, 6 " for "inclination," *read* "inebriation."
24, 22 " *insert* "and" *before* "as."
24, 22 " for "mucus," *read* "waves."
25, 16 " for "radiated," *read* "radicated."
25, 21 " for "radiated," *read* "radicated."
25, 3 from bottom, *insert* "with," *before* "which."
28, 30 from top, for "like," *read* "of."
29, 3 from bottom, *insert* "so," *after* "rapidity."
30, 17 from top, after "profession," *insert* "only."
32, 4 " after "benefit," *insert* "of course."
32, 8 " for "secured," *read* "broken."
32, 35 " for "no," *read* "as."
34, 33 " for "sedentia," *read* "ledentia."
34, 34 " for "case," *read* "coil."
43, 39 " for "reach," *read* "search."
47, 7 from bottom, for "an," *read* "in."
51, 19 from top, for "secretory," *read* "exhalant."
51, last, for "awakened," *read* "weakened."

APPENDIX.

Annexed are a few cases illustrative of the preceding principles. I have transgressed so far beyond the limits assigned to myself for this paper, that I have deemed it best not to incumber them with too many details, and therefore I have confined myself to a general description of the case, with a succinct view of the treatment, and such remarks and inferences as the case seemed naturally to justify.

Case I.—*July*, 1829. D. aged forty, full habit of body, sanguine temperament, unaccustomed to the climate, was taken with a severe chill after being exposed to a rain on the 13th, which lasted upwards of twelve hours. Saw him in the forming stage of the fever, when he had soft, contracted pulse; violent vomiting, with discharges of much bile; great tenderness of abdomen; tongue red on edges, and furred in middle; hot, dry skin. Applied six cups to epigastrium, which at once suppressed the vomiting, relieved the cold chills still existing, and produced perspiration. Ordered mucilaginous drinks, and fomentations of the same to the abdomen. Saw him again in four hours. Had had no vomiting since cupped, though it had previously been incessant; fever much less; fine perspiration followed the cups; pulse full and developed. He had however pain in the head, and I therefore bled him twelve ounces, with relief. Ordered Seidlitz powder, and continue mucilaginous drinks and fomentations; fever soon subsided.

14*th*. Much better; no return of fever; continue treatment.

15*th*. Feels very well; discharged.

Remarks.—This is an ordinary case of bilious fever, severe in its incipient stage, and portending a violent attack, but cut short at once by the local depletion, applied as near as possible to the irritated organs; which arrested the disease in its first seat, and cut short the sympathizing consequences. The gall-bladder in this case had either, from the violent efforts of vomiting, thrown out its contents, or the liver itself had associated its action with the irritated stomach, and increased functional action had been the consequence. In either event, the local depletion had arrested it, either in the first seat, or the second. Though the ordinary course by an emetic, cathartic or calomel might have relieved in this case, by acting upon the secretions; yet the course of relief by revulsive secretion, still leaves the stomach, the receiving organ of the remedy, as well as the seat of the disease, in a state of irritation; and hence much more liable to repetitions of the paroxysm, which, in this case, was prevented by the total removal of the primary diseased impression, and the case cut short. The local capillary bleeding has all the advantage of the revulsion and depletion, and leaving still the important organ, the stomach, unembarrassed, and perfectly free to exercise all its reactive powers. Similar cases could be multiplied, were it necessary.

Case II.—*June*, 1829. B. aged forty-eight, of a full sanguineous habit, dark complexion, had been taken with quotidian fever on the 16th, and had taken a cathartic of Lee's pills. I was called on the 18th, and found the patient in a chill, with pain in epigastrium, and in head, back, and limbs; glassy eyes; applied six cups to epigastrium—relieved chill almost immediately in the cold extremities. Fever afterwards lighter than usual. Advised mucilaginous drinks.

19*th*. Much better; ordered oil; chill much lighter; three cups to epigastrium soon relieved it; fever light.

20*th.* Fever very light. Drinks continued.

21*st.* Discharged.

Remarks.—This is also a very ordinary case, recorded to show the influence of local detractions of blood in the forming stage of fever—the chill.

Case III.—*July* 28*th*, 1831. D. aged forty-two, of New Orleans, taken with malaise; chilliness; vomiting; severe pain in back, head, and limbs; great tenderness of epigastrium; glassy, muddy eyes; white, dry, fleshy tongue; high fever; pulse small and quick; and thirst. Cupped the epigastrium very freely, to open pulse and relieve general symptoms; then bled, and afterwards gave demulcents, and resorted to fomentations and enemata, with great relief.

Second day gave twenty grains of calomel at the solicitation of a professional friend; it purged him severely, occasioned jelly stools, prostrated him much, and produced cold extremities. There now ensued a violent double tertian, with a severe cold stage, with the additional alarming symptom, of the greatest difficulty in breathing and deep sighing; a large cupping, (ten cups,) to the epigastrium relieved these with surprising quickness, and with the sinapisms brought on the second stage. The paroxysms continued to return for several days with great violence, even after full restoration of healthy action in bowels and liver, indicated by perfectly healthy, full-formed evacuations, but were finally subdued by the free use of local bleeding. Solution of quinine was given after healthy secretion from bowels, liver, and skin, were restored, but to the aggravation of the case. The solution of arsenic, snakeroot, and diaphoretics, had no effect in arresting the disease. Finally, local bleeding from epigastrium was resorted to again, and then the quinine answered.

Remarks.—The above case is given to show the influence of capillary bleeding from the epigastrium in one of our highest grades of fever, with a strong tendency to form the algid fever, (cold plague,) of the country. One or two more cathartics, or doses of calomel, would have accomplished it fully, by increasing the original irritation not relieved by revulsive *secretion.* Such then, though not fully formed, was the prototype of the great bug-bear of the country—the "cold plague," in *nine cases out of ten a factitious disease!* The prompt local bleeding arrested the inflammatory congestion, upon which the difficulty of breathing and cold extremities depended; the other radiated irritations stopt it in its forming stage; and the termination of the case would probably have been much more rapid, but for the administration of the calomel. I have never seen alarming and violent symptoms relieved sooner than the gasping for breath, the vomiting, cold extremities, and hot glassy eyes were, by the cupping in this case.

Case IV.—*September*, 1831. E. aged thirty-eight, of a delicate sanguine temperament, had been attacked with double tertian on the 3d inst. and taken the ordinary domestic remedies, calomel, oil, salts, &c. I was called to him on the 7th, and found him with high fever; delirium; great jactitation; pulse small and weak; yellowish, watery purging; great tenderness and tension of epigastrium; dryness of mouth and skin. Applied six cups to epigastrium; cold applications to head and abdomen after cups taken off; mucilaginous drinks and cooling injections. Called in two hours; delirium relieved; fever and thirst much less; perspiration. Continue treatment; and gave spt. nit. dulc. to continue the mild revulsive action on the skin.

8*th.* Much better; fever milder; treatment continued; ordered oil.

9*th.* Severe paroxysm, with delirium and cold extremities, which soon yielded to cups to epigastrium; tongue better.

10*th.* Ordered blisters to ankles, as a permanent revulsive to prevent by their absorbing influence the formation of a paroxysm; they acted freely also on the skin; no fever.

11*th.* Severe paroxysm; delirium; cold extremities; great restlessness; blis-

ters dry; applied twenty leeches to epigastrium, and six to temples; cooling injections; cold to head; great and speedy relief from the leeches and restoration to consciousness; ordered blue pill, to act upon the secretions, every six hours.

12*th*. Continue pills and mucilaginous drinks; bowels open; but stools thin; no fever.

13*th*. Paroxysm severe; extremities cold; delirium, though its return was procrastinated several hours and thought he had escaped; epigastrium of a *bladdery* feel; applied twenty leeches to it, and six to temples; hot fomentations and frictions to extremities; in a few hours, that is, as soon as leeches fairly removed and bleeding over, consciousness returned. Pills stopped; and from this time there was no return of paroxysm, and convalescence was established.

Remarks.—The double tertian is the most ordinary fever in this climate—the alternate paroxysms being much milder. To arrest the disease it is not sufficient to break one link in the chain—it is then only converted into the simple tertian, with great liability to relapse into the double type. This was a case in which the symptoms were very severe and violent, occurring at the worst season of the year; and long before medical aid was called, as is usual, the common domestic remedies had done all to irritate, but nothing to relieve, by their secretory depletion. It exhibits in a remarkable manner the great power of local bleeding over, not only the cold symptoms, but the great tenderness and tension of epigastrium, the delirium and fever. The tension alluded to above, as distinct from tenderness and pain, is one almost always calling for local detraction of blood. I have seen the most marked influence from it recur in cases the most desperate and protracted; one of which is noted in Case VI. Small as was the quantity of mercury exhibited in this case, about ten blue pills in about a week, yet ulceration of the gums was the consequence and ptyalism; these were not perceptible during the paroxysm, but in the interval were troublesome. This fact sufficiently proves it could have had no influence in arresting the disease.

Case V.—*July*, 1831. M. aged thirty-five, of a sanguine temperament, taken with double tertian remittent on 3d, had been complaining of functional derangement of stomach and bowels for a month or two, and had repeatedly taken cathartic medicines and particularly calomel. Called on 5th, and found him with high fever; pain in head; frequent loose, yellow, watery stools, which continued to disturb him for about a week; tongue whitish; epigastrium tense and tender; some enlargement of spleen; pulse in paroxysm 130 to 140; in remission 100 to 120. Bled; cupped twice; gave light diaphoretics; emollient fomentations to abdomen, and injections; demulcent drinks; after a few days, free use of pil. hydrargyri every four hours. The disease continued until the 12th, notwithstanding the local and general depletion, light evacuants, enemata, &c., and though the gums and mucous membrane of mouth were somewhat swelled, sore, and some salivation. The fever continued to return with somewhat less violence to be sure; but pulse never under 100; diarrhœa but little amended; prostration of the forces considerable; tongue the same, and epigastrium tense.

It now became evident that the medicines that had been administered pretty constantly to act upon the secretions had failed; that if they had not increased the previous irritation brought on by a long course of irritating medicaments, acting upon an increased excitability, it was because they were accompanied with local bleedings, demulcents, fomentations, &c. A free ptyalism had no influence whatever in arresting the march of the disease; in fact, it was now evident there was too much and too deeply radicated a gastro-intestinal irritation to permit or effect secretion, and it was equally apparent that this impediment must be removed, or the patient must soon succumb; we had little to expect from secretory action alone in the crippled state of the forces; the local lesion must be awakened or eradicated, or the case was desperate. Nervous prostra-

tion was now too great to bear the cups, and twenty leeches were applied to the epigastrium, (on 12th,) with marked benefit; less fever and general irritation; slept better; secretions from liver and intestines darker coloured and more consistent. Pills omitted; continued other treatment.

13*th.* Applied twenty-five leeches to abdomen; the influence now was still more marked; pulse reduced below 90; febrile heat and irritation almost gone; stools thick and dark-coloured; abdomen become soft and pliable; tongue much better; skin soft and moist; countenance clear; but little further paroxysmal tendency; the pulse however kept up to from 90 to 100 about midday.

17*th.* Believing now that as the secretions were all restored, eyes bright, clear and natural, strength improving, appetite returning, and every other appearance of convalescence, that the pulse was kept up from cardiac irritation, which at first sympathetic, had become independent from continued irritation, a decoction of digitalis was administered; this had the effect in a day or two of lessening the irritation, and restoring the circulation to its accustomed slowness and impulse, and there was no further impediment to restoration.

Remarks.—This is a valuable case: cathartics, and especially calomel, had been pretty freely tried in it before medical advice was sought, with the effect of increasing the intestinal irritation, and producing free evacuations from the bowels, not only without abating, but really aggravating the fever; and it is probable that the indulgence in them may have been the first cause of its production—a popular prejudice existing, that if "the bowels are kept open, and *bile* prevented *accumulating*," no fever can ensue, and they are looked upon simply as cause and effect: a rapid increase of all the symptoms induced him to call in medical aid; general bleeding was carried as far as the pulse and symptoms of prostration rendered it prudent and safe; local bleeding ameliorated the paroxysms, and it was supposed that giving such medicines as act on the secretions would equalize excitement, and enable the recuperative powers of the economy to produce restorative reaction; it became evident, however, that the irritation had became too deeply radicated from the frequent repetition of the cathartics—the calomel particularly, producing most probably ulceration of the bowels—and hence then the final resort to local bleeding again; this brought it within the sphere of a safe secretory or reactive influence, and there was now no difficulty in establishing secretion and restoring harmony.

The cardiac irritation being evidently functional and insulated, was soon subdued; similar irritations of the heart from long-continued fever, are by no means unusual; they soon yield to remedies acting upon its organic sensibility; to call it fever, and to treat it, by cathartics, diaphoretics, &c. is hazardous in the extreme; the gastro-enteric surface is not in a situation, from its crippled condition, to revulse upon, and the irritation and debility is usually increased by it, and the danger of the case aggravated.

This case, and many similar might be presented from my case-book, is full of instruction; secretion can only take place at a certain point—minus or plus that point, and none ensues; no variation or grade of cathartic treatment ensures this point; depletion then must ensue from some emunctory to produce it, and there is none so safe or so much in our power as that from the surface of the skin.

Case VI.—*July,* 1829. R. aged twenty-five, of a sanguine, nervous temperament, had been sick some weeks of intermittent fever, and for the last ten days, after repeated relapses with remittent fever; had been treated by calomel and purgatives, and the whole routine of domestic treatment, with a *perseverance worthy of success, and with a violence that did all it could to enforce it!* Finding it all useless, medical aid was sought.

I found him with hot and dry skin, except extremities, which were cold; coma, stupor of two days continuance; subsultus tendinum; tongue red and dry; fuliginous teeth; abdomen meteorized, and excessively tender; frequent watery,

yellowish stools; colour of skin, bluish-green, which closely adhered to the muscles, and great emaciation. I applied eight cups to epigastrium, and blisters to extremities; warm mucilaginous fomentations to abdomen; mucilaginous drinks, which, in eight hours, restored him to his recollection, and in a great measure equalized the circulation. On the ensuing day the cups were repeated. As there was still some stupor, and dryness of tongue, and diarrhœa, I ordered mucilaginous injections, and dressed the blistered surfaces with acetate of morphia in oil; he had now a good night's rest, and felt much better. The third morning the abdomen was much softer and no tenderness; the skin was becoming moist; the watery stools arrested; tongue moist. Continued drinks, fomentations, &c. adding a thin potation of arrow-root every two hours, and dressed blistered surfaces with quinine. He now gradually mended, the appetite returned in a few days, and no further difficulty was experienced but to restrain it.

Remarks.—Here then is a case of protracted *factitious* typhoid fever, so often made by treatment as much so as *bilious* symptoms in ordinary fevers—with radiation of gastro-enteritis to the encephalon—with the most desperate prostration and debility, which the ordinary treatment was rapidly carrying down that great road where such cases *usually terminate!* Could any thing be expected from cathartics, emetics, and calomel in this case? From the intenseness of the gastro-enteritic irritation no impression that was remedial could be expected from that surface; could it be supposed that they could relieve that condition of the stomach and intestines upon which indubitably all these phenomena depended, and from which they originated? Had these oppressed, irritated and phlogosed organs the power in their crippled state to call a sympathizing organ to their relief? Could it be supposed that in their present weakened condition they could disembarrass themselves by summoning some of their associating organs to their relief? Purge after purge had been tried in vain; calomel's boasted powers has spent its influence like the idle wind—they had only tended to add irritation to irritation; the intestinal exhalants poured forth their fluids without effect; the encephalic irritation expended its sympathizing influence in vain, without removing this deeply radicated inflammation; it was here then that local bleeding put forth its peculiar virtues in removing this ataxic state, by lessening the force of the action at the fons et origo mali, the associating organs were enabled to remove and equalize a less degree of action, and restore harmony.

I will now give a few cases of the yellow fever of 1829. By "yellow fever" is meant an epidemic disease of a malignant nature, and of peculiar type, differing in its symptoms from the ordinary fevers of the locality sufficiently to be easily detected; characterized this season pretty much as usual, by violent pains in the head, back and limbs; severe and usually burning pain in the epigastrium; dull, red, muddy, idiotic eye, with a sensation with some as if dirt had been thrown into them; great soreness, tenderness and yellowness of surface; red, dry tongue; pulse not often over or as much as 100; usually 80 to 90, and full; coma; stupor; delirium, though in some instances so slight, as to be hardly sensible of it; the patients noticing but little; answering questions intelligibly; and at the period of convalescence, their sickness seeming like a dream to them; bleeding from the gums and nose, and terminating usually between the third and seventh days, though sometimes more protracted, and frequently by black vomit. These, it is to be remarked, rarely ever occurring in any one case, but they were the *usual characteristics*, and always a sufficiency of them were present to mark the specific character of the disease, and the epidemic law—making all diseases, during its prevalence, wear its livery.

Case VII.—*Nov.* 1829. W. aged twenty-eight, of a delicate make, and nervoso-sanguineous temperament, had been affected with a severe *simple gastritis* in the summer—recognised by red tongue, thirst, pain in scrobiculis cordis, particularly on swallowing solid food, glassy eyes and fever, as well also

by the effect of mild mucilaginous ingesta, cupping to epigastrium, and emollient enemas. When taken with the yellow fever in this late period of the season, (having recently returned from the country,) *in addition to the above symptoms*, there was exhibited an universal yellowness of the cutaneous surface; delirium; dilated pupils; a dull, idiotic expression of eye; pains in limbs and head. Capillary bleeding had the effect of ameliorating, but could not subdue them; the general treatment pointed out above was also pursued, medical aid not being called until the third day. The fourth day was cold with frost, and on the sixth the patient died, with coffee-coloured vomiting. Permission could not be obtained to make an examination.

Remarks.—This case is more particularly given to exhibit the similarity and the difference between *simple gastritis*, and the gastritis of yellow fever. The case made a very forcible impression upon me at the time, and was very influential in producing the opinion formerly stated. The occurrence of frost is almost always fatal to the cases on hand, unless very mild.

Case VIII.—*November*, 1829. S. aged about thirty-five, sanguine temperament; taken with the usual symptoms above enumerated. In this case the delirium was more than usually violent, lasting about forty hours, and the tongue entirely dry and red; by the use of free cupping and leeching, which were several times repeated, the first to epigastrium, the second to the neck and head, and most perseveringly applied, fresh ones as fast as the others filled, with cooling applications, acidulated demulcent drinks, and emollient injections, and fomentations to abdomen, the worst features in the case were subdued; then a small dose of oil, and a continuance of the treatment for a few days, put the case beyond danger; it lasted five days.

Remarks.—This was a case of marked severity, and evinced in a distinguished manner, the triumphs of persevering capillary bleeding in removing an inflammation of apparently the most desperate character, having every symptom of an early termination in death, occurring in an individual of very fragile, delicate constitution; the result of any other treatment upon such a stomach and head, the individual being unable to swallow, except the mildest drinks, it is not difficult to anticipate. The patient during her whole illness knew nothing of what had transpired.

Case IX.—*Sept. 24th*, 1829. E. aged twenty, of delicate, sanguine temperament, and fair complexion, taken suddenly, with the usual symptoms of marked violence. I saw her during the first hour, and found the characteristics of the disease very strongly marked; bronzed complexion; dilated pupils; dull, muddy eye; red tongue, and subsultus tendinum, and great tenderness on pressure at the epigastrium; bled and cupped very freely; light mucilaginous sub-acid drinks, cooling injections; fomentations to abdomen. On second day better, gave ten grains of calomel, followed by Seidlitz powder: the recurrence of fever afterwards was much lighter, and in three days she was convalescent.

Remarks.—This case shows the influence of active treatment at the *commencement*. The disease was met in its forming stage, and the symptoms indicated, that if not as promptly subdued, the utmost malignancy should be anticipated.

Case X.—*October 4th*, 1829. R. aged about thirty, sanguine temperament, full habit of body, had arrived about a week since from the Upper Missouri, with a boat-load of apples, &c. he being one of the hands. I was called to him on the 4th, the second day of his illness, in his boat, near ankle deep, with bilge water and floating rotten apples; without any comforts; with most of the above symptoms; viz. deeply-bronzed complexion, with blood oozing from his gums; light fever; pulse 80 and full; eyes muddy, glassy, and idiotic expression; with very tender abdomen. He was very freely cupped, and

treated as above, which was repeated for three days; five grains of calomel was finally given him, and a light dose of oil. In the course of the treatment he became perfectly yellow. On the second day the blood stopped oozing from the mouth. On the fourth day, so much better as to be removed to the bank, and his convalescence was rapid, though the yellowness was some time in entirely subsiding.

Remarks.—The above exhibited the marked influence of local depletion in arresting that violent inflammation of stomach and intestines, and great ganglionic system, in its early stage, which characterize, in a remarkable degree, the prominent symptoms, as well as post mortem appearances of yellow fever. The above was an instance of great malignancy, and its rapid yielding to the new treatment, was as astonishing as it was gratifying. He had the poorest attendance, and was exposed most of the time to the disgusting effluvia of his offensive boat.

These were cases of those unhabituated to the climate, and selected on that account to show the effect of the treatment where there was no amelioration from climate—the three first had been here but a short time—the last had just arrived.

St. Francisville, Louisiana, March, 1832.

THE END.